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SELECTED ISSUES

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Prepared by Jared Bebee, Benjamin Carton, Antonio David, Alain Feler, Giulio Lisi, Guilherme Pedras, Can Sever, and Chaker Soltani with research assistance provided by Zarina Bentum and editorial support by Fairoza Jaghori.

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DAMAGE CONTROL: QUANTIFYING THE MEDIUM-TERM SCARRING EFFECTS OF COVID-19 IN THE WAEMU[1]

This paper examines the persistent effects of the COVID-19 crisis on economic activity in the WAEMU over the medium term, focusing on three main channels: investment in physical capital, accumulation of human capital, and productivity, using a production function framework. The analysis suggests that the pandemic may have reduced medium-term growth by up to 1 percentage point under a scenario in which no mitigating policies are implemented to counteract scarring. In a proactive scenario in which policymakers take actions to mitigate scarring, the adverse effects of the crisis could be substantially diminished.

A. Introduction

1.   Large economic shocks, including the ones generated by health crises, can lead to persistent negative effects on economic activity over the medium term. There is ample evidence that certain events such as pandemics, financial crises, and political shocks can lead to persistent losses in output partly due to their effects on investment, human capital, and productivity (see Cerra and others, 2020 for a survey). In particular, a recent, but growing, literature shows that historical health crises (including SARS, H1N1, MERS, Ebola and Zika) can drag economic performance over extended periods of time, even though past episodes were not as severe as the ongoing pandemic.[2]

2.   This chapter quantifies the potential scarring effects of the COVID-19 pandemic on growth. The chapter raises several macro-critical questions. How can the scarring effects of the COVID-19 crisis be quantified? Are different channels, such as physical investment, human capital, or productivity growth, similarly important to account for the adverse effects of the shock? What is the extent to which proactive policies can curb scarring effects? The analysis presented here attempts to provide insights on these questions in the context of the WAEMU based on a growth accounting framework. The paper also undertakes a sensitivity analysis around the assumptions behind the main scenarios and discusses some policy options to address the medium-term effects of the COVID crisis.

B.   A Simple Framework to Quantify the Effects of the COVID-19 Crisis on Medium-Term Growth

3.   This chapter uses a production function approach to quantify the change in medium-

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[2] See, for instance, Fuentes and Moder (2020), Jorda and others (2020), Ma and others (2020), Aguirre and Hannan (2021), Cerra and others (2021) and Emmerling and others (2021).

term growth in the WAEMU relative to pre-crisis estimates under different scenarios. There are several channels through which the COVID-19 crisis could affect medium-term growth (IMF, 2021). The paper focuses on three main mechanisms that could be particularly relevant for countries in the WAEMU region: i) investment in physical capital; ii) human capital accumulation, and iii) total factor productivity (TFP).

The starting point is a standard production function with human capital-adjusted labor:

$$Y_t = A_t K_t^\alpha (h_t L_t)^{1-\alpha} \tag{1}$$

where *Y* is output, *K* is the physical capital stock, *A* is total factor productivity, *L* is labor, and *h* is the human capital index. Taking logs and denoting the growth rates for different variables *g*, medium-term growth over the 2021-26 horizon can be estimated as the sum of growth in total factor productivity (TFP), capital accumulation (physical and human), and labor force growth (population in the 15-64 age bracket):[3]

$$g_{Yt} \approx g_{At} + \alpha g_{Kt} + (1-\alpha)g_{ht} + (1-\alpha)g_{Lt} \tag{2}$$

4.   **The analysis compares two alternative medium-term growth scenarios with the medium-term forecasts envisaged before the crisis hit.** The comparisons are carried out relative to the pre-crisis estimation of medium-term growth (referred to as "scenario 1" in the Table 1 below). The two post-crisis scenarios (denoted as scenarios 2 and 3) describe the new medium-term outlook, which has been affected by the crisis: a "passive" scenario in which no active policies are taken to mitigate scarring; and a proactive scenario in which policymakers are proactive in counteracting the medium-term effects of the crisis. The main assumptions under each scenario are summarized in Table 1 and explained in detail in subsequent sections. Therefore, this paper specifically focuses on quantifying the difference in medium-term growth rates relative to pre-pandemic estimates, rather than the level of potential growth.[4] In subsequent sections, the paper also conducts a sensitivity analysis by changing the underlying assumptions and assessing how results are impacted.

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[3] The paper uses data from the Penn World Table (PWT) version 10.0 (Feenstra and others, 2015) for historical information on the capital stock and human capital index as well as the parameter α (the output share of capital) going from 1950 to 2019. One shortcoming of using PWT data is that it does not necessarily reflects the rebasing of GDP that occurred in seven WAEMU countries since 2018, which may affect estimates of investment and the capital stock. Labor force growth over the medium term is given by United Nations (UN) projections as reported in the ILOSTATs database. Other variables and parameters are pinned down by historical averages or assumptions as detailed below.

[4] Specifically, the analysis estimates the growth for post-crisis cases (2) and (3) using equation (2). Next, it reports the differences between growth rates in order to quantify the change in growth, compared with the pre-pandemic estimate in each case, that is, $g_{Yt}^{(1)} - g_{Yt}^{(2)}$ and $g_{Yt}^{(1)} - g_{Yt}^{(3)}$.
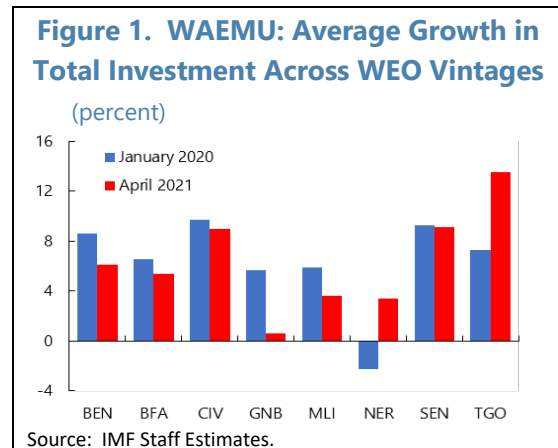
Table 1. WAEMU: Key Assumptions for Medium-Term Growth Components under Alternative Scenarios		
Pre-crisis estimate Scenario (1)	**Post-crisis scarring without active mitigating measures** Scenario (2)	**Post-crisis proactive scenario under policies to mitigate scarring** Scenario (3)
Physical Capital: • Investment (public + private) based on WEO forecast from January 2020 vintage (pre-pandemic).	*Physical Capital*: • Investment based on WEO forecast from April 2021 vintage (post-pandemic).	*Physical Capital*: • An ambitious but feasible boost in private investment to gradually catch up with the global average investment share by 2030 which would help the WAEMU sustain its progress towards the SDGs.
Labor and Human Capital: • UN labor force growth projections. • Years of schooling growing at the average long-term rate pre-pandemic.	*Labor and Human Capital*: • UN labor force growth projections. • Decline in years of schooling in 2020 due to school closures, while the growth rate of schooling years will only gradually catch up with the pre-pandemic long-term rate in subsequent years.	*Labor and Human Capital*: • UN labor force growth projections. • Decline in years of schooling in 2020 due to school closures, but it will quickly resume growing at the pre-pandemic rate starting from 2021 in the presence of active policies.
Productivity: • TFP growth calibrated to match IMF staff growth forecasts (as of January 2020) at the end of projection period.	*Productivity*: • Reduction in TFP relative to pre-pandemic scenario based on estimates of the effects of increase in informality (sectoral reallocation) and its dynamic link to TFP.	*Productivity*: • Impact of crisis on TFP attenuated by accelerated adoption of new technologies.

C.   Investment in Physical Capital

5.   Increased uncertainty and other consequences of the COVID-19 crisis could lead to adverse persistent effects on investment in physical capital in the WAEMU. Several factors may hinder the medium-term outlook for private investment in the region, including supply chain disruptions linked to lockdowns both domestically and through international trade channels, a more volatile and uncertain external environment (including commodity prices and capital flows), the reduction of activity and dimmer prospects in the tourism sector, as well as higher overall uncertainty. In addition, the lack of fiscal space renders it unlikely that increases in public investment could be sufficient to fully offset these headwinds. As a result, total investment could be more subdued than under pre-pandemic trends, as discussed in further detail next.

6.   Different vintages of IMF staff projections confirm the deterioration in investment prospects for the region with some differentiation across member countries. Within the framework described previously, the standard capital accumulation equation can be used to project growth in capital stock for the region, where I_t denotes investment and the depreciation parameter δ is obtained from the PWT database for each of the eight member countries: $K_{t+1} = I_t + (1-\delta)K_t$.

The investment rates as projected in the January 2020 vintage of the WEO database (the last vintage before the effects of the pandemic were incorporated into IMF staff's projections) are used to obtain the pre-pandemic capital stock over the medium term, whereas the investment rates as of the April 2021 vintage (in which IMF staff would have already incorporated the effects of the crisis) are used in the scenario with post-crisis scarring (scenario 2). In general, there has been a deceleration in expected investment growth over the medium term across vintages, but the changes vary by country. For example, Benin and Burkina Faso are projected to experience declines in the average expected investment growth rate by 2.4 percentage points and 1.1 percentage point (relative to pre-pandemic estimates), respectively, while the decline in Senegal has been more muted. In the cases of Niger and Togo, there was actually an acceleration of expected investment growth across the vintages. Overall, for the region as a whole the investment outlook is expected to be dimmer relative to pre-pandemic projections.

Figure 1. WAEMU: Average Growth in Total Investment Across WEO Vintages
(percent)

Source: IMF Staff Estimates.

7.   Private investment prospects have declined relative to the pre-pandemic projections, while public investment is projected to partially compensate for this fall only in the near term.

Different vintages of WEO projections suggest that the path of private investment has deteriorated due to the COVID-19 crisis, as illustrated in Figure 2. Public investment, on the other hand, is projected to increase to partially offset some of the slowdown in private investment, but only up to 2021; thereafter it would fall below levels projected before the pandemic.

Figure 2. WAEMU: Investment in the WAEMU (2019=100)
WEO projections of investment path

Private investment, Jan 2020 — — Public investment, Jan 2020
Private investment, Apr 2021 —— Public investment, Apr 2021

Source: IMF Staff Estimates.
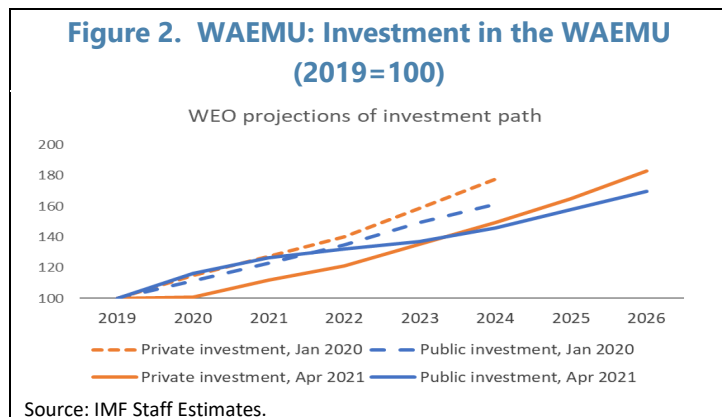
8.   Under active policies to promote private investment, the effects of the COVID-19 crisis could be attenuated. The proactive scenario assumes that WAEMU countries would gradually catch up with the global average investment share. The investment boost is calibrated to ensure that investment is consistent with the level of economic development proxied by GDP per capita in the WAEMU. To help the region achieve the 2030 agenda on SDGs, the process of catching up with the global investment share is assumed to be completed by 2030. In order to fill the investment gap fully until 2030, private investment has a role to play which could be supported by appropriate reforms and active government policies. Under this scenario, to find the implied investment rate, and in turn investment gap, the relationship between GDP per capita and investment (as share of GDP) is estimated using

global data over the period of 1960-2019.[5] Next, whenever the investment rate is below the expected level, private investment is assumed to fill the gap. These calculations suggests that, on average, additional private investment of around 0.8 percent of WAEMU GDP relative to the April 2021 WEO starting from 2022 is needed annually.[6]

D. Human Capital Accumulation and the COVID-19 Pandemic

9.   School closures linked to the pandemic can have longer-term adverse consequences for the accumulation of human capital. Schooling and learning are affected, as for example,

enrollment falls and drop-out rates increase (Azevedo and others, 2020; Fabrizio and others forthcoming). Interruptions in human capital accumulation as a direct result of losses in education can impede longer term economic growth (Barro, 1991).[7] Educational losses due to school closures during 2020 are bound to generate adverse effects in social and economic outcomes in the absence of appropriate counteracting policies (IMF, 2020b).

Figure 3. WAEMU: Years of Schooling Under Different Scenarios

Source: IMF Staff Estimates.
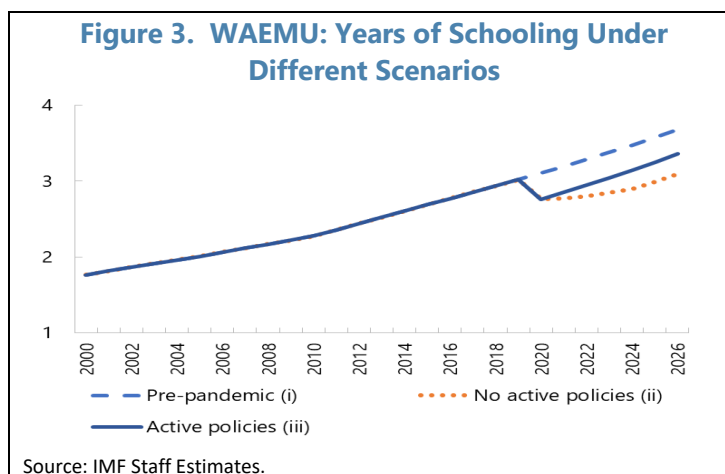
10.   Limited access to remote learning opportunities are likely to have caused a deceleration in human capital accumulation in the WAEMU. In the pre-pandemic scenario, years of schooling are assumed to grow at their long-term historical average rate (dashed line in Figure 3). In the second scenario, the duration of school closures is used to proxy for losses in years of schooling in the WAEMU, given limited access to online learning.[8] Based on the UNESCO school

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[5] More specifically, investment (as share of GDP) is regressed on the log of GDP per capita using data from a large sample consisting of developing, emerging market and advanced economies. A statistically significant (at the 1 percent level) relationship between the two variables is found, indicating that investment as share of GDP becomes larger as GDP per capita increases. Then, the investment gap in the WAEMU is estimated by calculating the implied rate of investment based on projected levels of GDP per capita over the period of analysis.

[6] In terms of private investment in Africa, Eyraud and others (2021) estimate the target of an additional 3 percent of GDP by the end of this decade.

[7] On top of the direct effect of school closures on output as captured by the scenarios described above, school closures are an important channel through which the pandemic can generate long-lasting effects on inequality. This occurs because underprivileged students from poorer households (e.g. with lack of internet access) are more exposed to disruptions in learning opportunities (OECD 2020). This can add to the adverse effect of the COVID-19 crisis on poverty and inequality, by potentially affecting lifetime income and earnings trajectories (Light, 1995; Card, 1999; Holmlund and others, 2008; Azevedo and others, 2020). An increase in poverty and inequality can further hinder a resilient and stable recovery, for instance, by fueling social unrest (Alesina and Perotti 1996; IMF, 2020c).

[8] This assumption was used in the literature, since remote learning has low effectiveness in low-income countries (York and others 2020, Buffie and others 2021). UNICEF-ITU (2020a) reports the high rates of school children who are unconnected to the internet in West and Central Africa. Similar numbers are reported by UNICEF-ITU (2020b).

closure monitoring database, COVID-19 related school closures were longer than one month for the majority of countries in the region. These effects are likely to be persistent because it is difficult to expect a strong reversal of the lost time in schools (or large increases in schooling hours or enrollment rates thereby generating an exceptionally high rate of growth in schooling years) in the short term. Under this "passive" scenario, it would be harder to bring students fully back to school fully and regularly, especially underprivileged students. Children from families with financial difficulties could permanently drop out. Students who may have already started supporting their families during the school closures may not be able to leave work to return to their studies. In addition, girls may be more disadvantaged than boys in terms of continuing their education after a long break in some regions and communities (World Bank, 2021a; Fabrizio and others forthcoming). There could be other factors preventing the return to pre-pandemic rates of progress in the years of schooling, as well, including disruptions to the educational system. For instance, parents of the students who will start primary school may be hesitant due to possible unpreparedness of schools and ongoing uncertainty about health risk. Therefore, in the scenario with no active educational policies addressing such scarring effects, it is assumed that growth rate of years of schooling would only gradually catch up with the pre-pandemic rate by 2026 (dotted line in Figure 3).

11.   Nevertheless, active government policies and investment in education could prevent this hysteresis effect by minimizing drop-out and lower enrollment as schools reopen. If that is the case, despite the schooling loss due to the earlier closures, students will go back to schools without an increase in dropouts or lower enrollment rates. Hence, the pace of growth in years of schooling would catch up with the pre-pandemic rate quickly. Under this scenario, it is assumed that the growth rate of years of schooling would go back to the pre-pandemic long-term rate starting from 2021 in the WAEMU (solid line in Figure 3). Active policies to prevent persistent educational losses due to school closures play a crucial role in this scenario and are further described below.

E. Productivity and the COVID-19 Pandemic

12.   Informality and technology adoption are two key drivers of productivity growth in developing economies, which are likely to have been significantly affected by the COVID-19 crisis. The effects of the pandemic on total factor productivity are complex and multifaceted (Fernald and Li, 2021). This paper focuses on two key aspects that are likely to be relevant for the WAEMU: (i) sectoral reallocation towards an increase in informality and (ii) the role of digitalization. Large economic shocks such as the COVID-19 crisis and, before that, the global financial crisis tend to be associated with increases in the share of informal activities in the economy as firm bankruptcies increase and formal employment declines. At the same time, on the positive side, the pandemic might have accelerated trends towards digitalization in the region given increase in demand for tools for remote working, learning, and other digital services.

13.   The informal sector remains large in the WAEMU, even if important declines were observed over the last twenty years. Based on the estimates from Medina and Schneider (2020), the informal sector on average amounted to around 43 percent of the official GDP across the WAEMU region during the 1990s, but informality—measured as the value added of all economic activities that are hidden from official authorities for monetary, regulatory, and institutional

reasons—has declined to 40 percent and 36 percent during the 2000s and 2010s, respectively. However, compared with other emerging market and developing economies (EMDEs), the pace of the progress in reducing informality has been slower (Figure 4, left-hand-side chart). Moreover, there has been sizable heterogeneity in terms of the size of informal economy across WAEMU member countries prior to the COVID-19 shock. Based on the latest available estimates, Niger, Senegal, and Benin appear to have larger informal sector amounting above 35 percent of their official GDPs (Figure 4, right-hand-side chart).

Figure 4. WAEMU: Size of the Informal Economy

Source: IMF staff calculations, Medina and Schneider (2020). Informality encompasses all economic activities which are hidden from official authorities for monetary, regulatory, and institutional reasons. Other EMDEs include Emerging market and middle-income economies as classified by the IMF WEO. Annual numbers are calculated as weighted averages, where weights are real GDP, obtained from World Bank World Development Indicators. Simple averages for each decade are reported in the left chart.

14.   The informal economy may have acted as an immediate buffer during the COVID-19 shock, but increased informality could also hamper the recovery and medium-term growth. In developing economies, recessions are typically accompanied by an increase in the relative size of the informal sector, which acts as a "buffer" to shocks (David, Pienknagura, and Roldos, 2020). While there is no data yet available on the effects of the pandemic on informality in the WAEMU, historical experience suggests that an expansion in the share of of informal economic activity could have occurred during the pandemic, which may have helped workers who have lost their jobs due to the closure of certain economic sectors find other ways to sustain themselves. Moreover, during the pandemic, lockdowns and social distancing measures may have affected formal businesses to a larger extent, relative to informal activities, since the informal sector, by definition, consists of economic activities that are "hidden" from the authorities. Therefore, the informal sector may have absorbed some portion of job losses, and in turn, helped to mitigate the immediate adverse effect of the pandemic on GDP. Nevertheless, productivity is typically lower in the informal and the informal sector is less capital intensive (La Porta and Shleifer 2008, Benjamin and Mbaye, 2012). In addition, resource misallocation is typically more prominent in countries with large informal sectors (IMF, 2019a). Hence, the likely increase in the size of the informal sector due to the pandemic could lead to adverse effects on potential GDP.

15.   The empirical evidence confirms significant and persistent negative effects of the informal sector on total factor productivity. Estimates for a sample of 64 emerging markets and developing economies over the period 1991-2017 indicate that an increase in the share of the informal sector in the economy reduces total factor productivity (Figure 5). As illustrated by the impulse response function depicted, an increase in informality calibrated to be of the same size as the one observed (on average across countries) during the global financial crisis of 2009 is associated with a decline of TFP of 0.9 percent on impact, widening to 1.5 percent after one year, before gradually receding at longer horizons. The specification used to obtain these estimates is based on the local projections method at an annual frequency:

Figure 5. WAEMU: Increases in Informality and TFP

Effects of Informality on TFP

Source: IMF Staff Estimates.
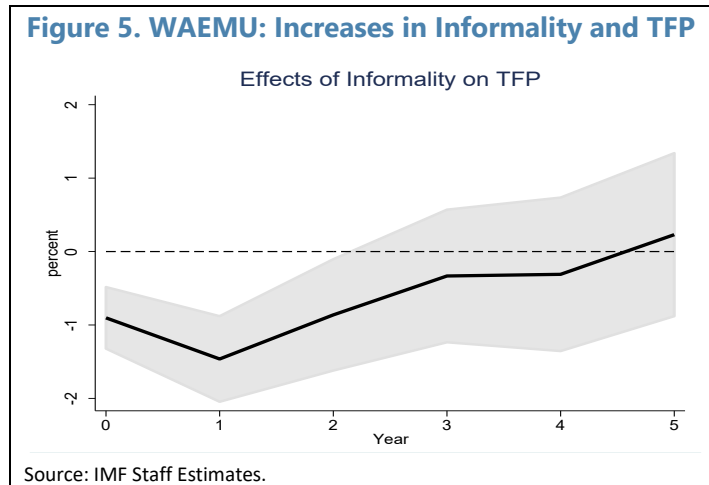
$$y_{i,t+h} - y_{i,t-1} = \alpha_i^h + \gamma_t^h + \beta^h \Delta \text{Inf}_{i,t} + \delta X_{i,t} + \varepsilon_{i,t+h}$$

where y denotes total factor productivity (from the PWT dataset); $\text{Inf}_{i,t}$ denotes the share of the informal sector on the economy (from Medina and Schneider, 2020); and h denotes the time horizons considered. $X_{i,t}$ denotes a set of control variables, which includes lagged values of the dependent variable and of the change and the level of the informal sector share as well as changes in the commodities terms of trade. The specification also includes time (γ_t^h) and country (α_i^h) fixed effects to capture common shocks and time-invariant country features, respectively. In the simulations presented below it is assumed that TFP growth declines relative to the pre-pandemic baseline on impact following the COVID-19 shock and the effects persist over the next two years, as illustrated by the solid black impulse response function in Figure 5.

16.   On the positive side, the pandemic may also have accelerated certain trends in structural transformation and technology use, which could have beneficial implications for productivity growth. Social distancing mandates, school closures, and lockdowns have increased the demand for tools that allow for remote working and learning as well as the provision of digital services, which could accelerate the pace of digitalization in the region. In fact, there is evidence that more than one in five firms in sub-Saharan Africa have started or expanded their use of digital technology in response to the COVID-19 shock (World Bank, 2021b).

17.   In this context, the scenario with policies to mitigate scarring assumes an increase in digitalization with ensuing positive effects on total factor productivity growth. The effects are calibrated using estimates from the literature as reported in IMF (2020a), which suggest that a 1 percentage point increase in the share of the population using internet leads, on average, to a 0.125 percentage point increase in the growth of real per capita income based on evidence from a

range of studies. For the purposes of the scenario, we assume that the bulk of this increase in income per capita is due to productivity growth. In addition, the proactive scenario assumes that the COVID-19 shock would lead to a one standard deviation increase in the use of internet (calculated based on historical information for the WAEMU). This corresponds to an increase in internet use of a little under 2 percent of population, or alternatively two times the average yearly increase in the WAEMU countries over last two decades.

F. Putting All Results Together

18. **Under the scenario with scarring, but no new policies to counteract its effects, the COVID-19 crisis would reduce medium-term growth in the region by 0.7 percentage points.** The results are reported in Table 2. Over the period 2021-26, the analysis suggests that the COVID-19 pandemic would have caused a decline in potential growth of about 0.7 percentage point per annum, relative to growth levels estimated in the pre-pandemic period (the gap between case (1) and (2) above). This would translate into cumulative potential output losses of around 3 percent in five years (potential output would be 3 percent lower relative to what was expected before the pandemic). These losses are in line with the ones estimated at the global level by IMF (2021).

Table 2. WAEMU: Medium-Term Potential Output Growth Losses in the WAEMU Under Two "Post-Crisis" Scenarios		
	Post-pandemic scarring under no new policies **Gap between (1) and (2)**	**Proactive scenario with policy response** **Gap between (1) and (3)**
Medium-term growth loss (in percentage points relative to pre-pandemic levels)	**-0.7**	**-0.2**
Of which due to effects on:		
Human Capital	-0.3	-0.1
Investment	-0.2	-0.2
Productivity	-0.2	0.0

Source: IMF Staff calculations. The fact that the sum of investment (-0.2) and human capital (-0.1) numbers does not add up to -0.2 in the second column is due to rounding to 1-digit. In two digits, the growth loss due to investment and human capital are -0.16 and -0.06, respectively.

19. **If policymakers implement an appropriate combination of policies to mitigate the effects of the crisis, potential output losses could be almost entirely eliminated.** The effects of the crisis on medium-term potential output put a premium on policies that address scarring and foster a resumption of the convergence process. In the next section, the paper discusses some policy options to that effect. The proactive scenario assumes the implementation of policies that could boost investment, mitigate human capital losses, and improve productivity growth, as mentioned

above. In this case, growth losses, relative to the pre-pandemic estimates (that is, the gap between case (1) and (3) above), could be reduced to a little over 0.2 percentage point over the medium term—with associated output losses of less than 1 percent over the period.

20.   **Given significant uncertainty around the assumptions made in the two post-crisis scenarios, the paper also undertakes some sensitivity analysis.** Under the scenario with no proactive policies to counteract the medium-term effects of the COVID-19 crisis, the paper considers various possibilities regarding the size of the effects of informality on TFP and human capital accumulation. In the scenario where authorities take actions to implement proactive policies, the paper considers alternative assumptions about the positive effect of increased internet use on TFP, as well as alternative convergence paths for human capital accumulation and for the increase in private investment.

21.   **Medium-term growth could decline by between 0.3 to 1.0 percentage points in the WAEMU in the scenario with no proactive policies to counteract scarring under alternative assumptions.** This range reflects in part the use of the upper or lower bounds of the 90 percent confidence interval of the estimates of the effects of increased informality on TFP, rather than the point estimate itself. Moreover, it also considers alternative convergence paths for the growth rate of years of schooling, instead of a catch-up with the pre-pandemic rates by 2026.

22.   **Under the proactive scenario, the decline in medium-term growth would be attenuated and may range from 0.1 percent to 0.4 percent under alternative assumptions.** This range reflects assumptions regarding longer and shorter time spans for the WAEMU to reach the global average in investment rates (controlling for GDP per capita). It also considers a slower catch up in the rate of years of schooling. Moreover, it also reflects the use of different estimates from the literature regarding the effects of the increase in internet use (as share of population) on TFP growth.

23.   **Overall, the sensitivity analysis confirms that the decline in post-crisis medium-term growth could be substantial in the absence of proactive policies.** Growth could be reduced by up to 1 percentage point over the medium term, while it is possible that if policymakers take actions to mitigate scarring, the adverse effects of the crisis could be virtually erased. The next section of the paper turns examines a number of policy options to address scarring.

G.   Some Policy Options to Address Scarring

24.   **Policies to mitigate scarring linked to the COVID-19 crisis comprise initiatives at both the national and regional levels.** There could be strong complementarities between regional and national policies in several of the areas discussed below. Moreover, institutions at the WAEMU level could play a coordinating role in the implementation of national policies to address spillovers effects and ensure a level playing field.

Investment and Business Environment

25.   Attenuating the medium-term effects of the pandemic on private investment calls for accelerating reforms to address long-standing shortcomings of the investment climate, including access to reliable electricity and finance. Data from recent World Bank's enterprise

surveys indicates that firms in the region typically list access the finance as one of the major constraints to their operations; for example, close to 70 percent of firms surveyed in Cote d'Ivoire and over 50 percent of firms in Senegal cite access to finance as a major impediment (Figure 6). Access to reliable electricity is another frequently cited constraint on investment, which is listed by over 60 percent of firms in Benin, Cote d'Ivoire, and Mali and over 70 percent in Guinea-Bissau. Competition from firms in the informal sector is also perceived to be an important barrier, especially in Cote d'Ivoire, Mali, and Niger.

Figure 6. WAEMU: Firms Identifying Issue as Major Constraint
(percent of firms)

Source: World Bank Enterprise Surveys.
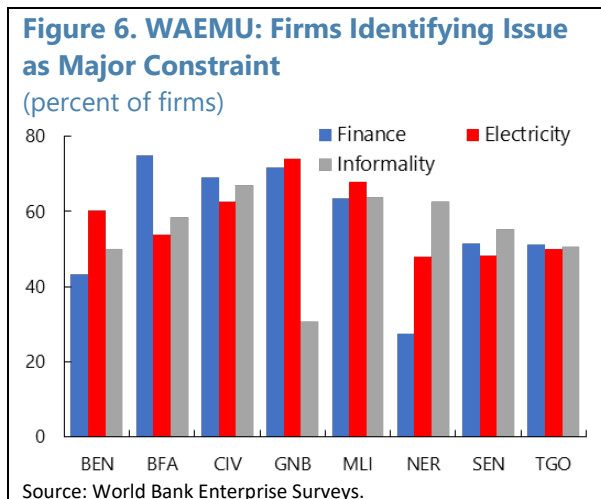
26.   Regional coordination of investments in energy as well as reforms to state-owned enterprises (SOEs) could increase the reliability of electricity supply. Better regional coordination of investments to upgrade and expand infrastructure could help provide electrical interconnections among countries and improve overall supply and transmission in the most disadvantaged areas. The WAEMU commission is coordinating several initiatives, including the implementation of regional projects in the energy sector under the Regional Economic Program (Programme Economique Régional- PER). Nevertheless, there are important bottlenecks to the implementation of regional investment projects and as a result execution rates have been weak. In addition, SOEs tend to dominate both power generation and distribution in the region. Improving the reliability of electricity supply in the WAEMU will therefore require addressing inefficiencies in the operation of these SOEs, in particular the need to achieve cost recovery in terms of tariff setting. Below-cost tariffs reduce the capacity of SOEs to invest in addition to creating fiscal risks. In this context, strengthening the oversight of SOEs by Ministries of Finance would be desirable.

27.   To foster banking sector development, the WAEMU banking commission should continue to monitor and guide the implementation of the Basel II/III prudential norms and operationalize the new resolution framework. Such policies would encourage banks to perform their financial intermediation functions more effectively. Weak banks should be promptly restructured. The supervisor should ensure that bank concentration risks are gradually reduced, and that the resolution and prevention of non-performing loans reduce the credit risk faced by banks.

28.   To expand access to credit, the role of microfinance institutions (MFIs) could also be strengthened. In order to increase access to credit for underserved beneficiaries (farmers, women, youth and SMEs), the *Banque Centrale des États de l'Afrique de l'Ouest* (BCEAO), in coordination with

national institutions, could further restructure the sector by encouraging the exit of unviable MFIs and enhancing monitoring.

29.   Beyond these efforts to promote private investment, there is also scope for making public investment more efficient. Despite the medium-term plan of fiscal consolidation, public investment could still have a positive contribution to growth with enhancements to its efficiency. Efficiency measures should focus on how each CFAF spent translates into effective public capital stock, contributing to potential output. The WAEMU lags comparator countries, including SSA economies in terms of the efficiency of public investment (Barhoumi and Towfighian, 2018). Based on recently conducted Public Investment Management Assessments (PIMA) for countries in the region, areas in which public investment management could be improved to enhance efficiency include: (i) management of PPPs; (ii) effectiveness of project appraisal and selection; (iii) the monitoring of project implementation; (iv) investment programming; (v) multiyear commitment authorization; and (vi) supporting investment information systems.

Productivity

30.   High levels of informality in the WAEMU are in part linked to cumbersome regulations and procedures, which increase the costs of operating in the formal sector. Data from recent

World Bank's Enterprise Surveys suggests that senior management in firms in the WAEMU region tend to spend a significant amount of time dealing with the requirements of government regulations (Figure 7). For example, making it easier for firms to pay taxes could decrease the cost of operating in the formal sector. Moreover, tackling excessively rigid labor market regulations could also reduce labor informality.

Figure 7. WAEMU: Senior Management Time Spent Dealing with the Requirements of Government Regulation (percent)

Source: World Bank's Enterprise Surveys
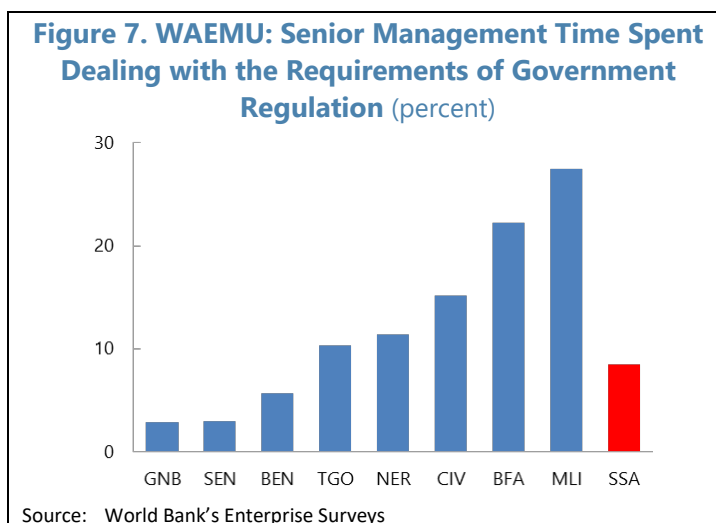
31.   Investing in digital infrastructure could also contribute to boosting productivity growth and helping the WAEMU prepare for future pandemics. Accelerating investment in digital infrastructure and improving internet access could increase productivity and efficiency in a number of sectors including manufacturing, commerce, health, and education. The WAEMU Commission coordinates efforts to liberalize the telecommunications sector and harmonize national rules and regulations to foster its development. More generally, countries could adopt a number of measures to foster digitalization, including investments in IT infrastructure, but also more traditional investments to ensure, for example, reliable electricity supply (see IMF 2020a).

32.   Deeper trade integration can also foster productivity. More integrated countries can benefit from increased trade, specialization gains and larger markets, which make production and

the use of capital and labor more efficient. Integration also fosters productivity growth by increasing competition, greater diffusion of technological innovation, and upgrading of labor skills. Trade in local products is by law free of customs' duties within the WAEMU and the broader ECOWAS community. Nevertheless, trade among WAEMU member states remains relatively limited. Various non-tariff barriers constrain the development of intraregional exchanges. These include the lack of common documentation for customs procedures and ad hoc levies charged for road transit. More generally, barriers to trade are more prominent in the WAEMU region relative of Advanced Economies and other Emerging Markets and Developing Economies (Figure 8). Priorities in this area include: reducing the extensive use of customs' exemptions and eliminating non-tariff barriers through less cumbersome customs procedures, as well as harmonization of national regulations on standards and procedures of customs.

Figure 8. WAEMU: Barriers to Trade in 2019

Border Clearance Efficiency (Median values; index)

Prevalence of Non-Tariff Barriers (Median values; index)

Source: World Economic Forum and IMF staff calculations. Higher values of the indexes indicate better performance.
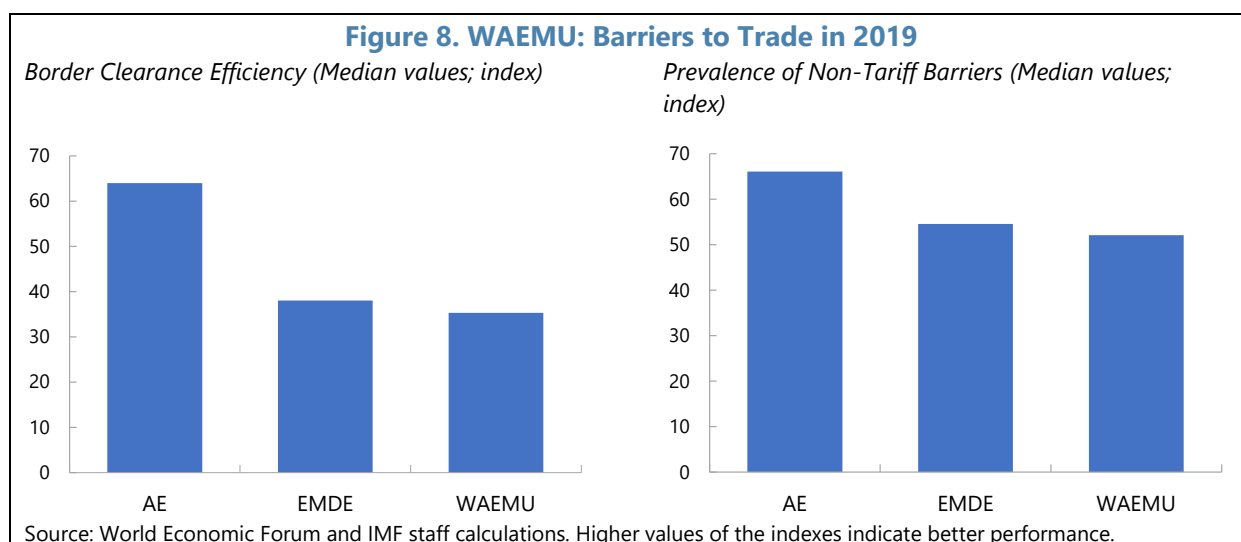
33.   The regional competition framework could also be upgraded with beneficial effects in terms of productivity growth. IMF (2019b) finds that increased competition can boost real per capita GDP growth rate in SSA by about 1 percentage point through improved competitiveness, productivity growth, and investment. The WAEMU Competition Commission is responsible for prohibiting anti-competitive agreements. The competition framework could be enhanced by revising the legal framework to enhance the division of responsibilities and cooperation between the WAEMU Commission and national competition authorities; this would improve the capacity to monitor and sanction anti-competitive practices within the region.

Education and Human Capital

34.   Increasing the amount and efficiency of public spending on education remains a priority for the region to address some of the learning losses due to the pandemic (IMF 2021c). The ratio of teachers per student in the WAEMU is low compared with other EMEs, at both primary and secondary levels, with adverse implications for the quality of education. Moreover, PPP-adjusted expenditure per student substantially lags other EMEs. Enrollment rates are significantly lower in WAEMU, particularly in the case of secondary education (Figure 9). Necessary policies also

include teacher training, financial support to meet schooling demands, and support programs for students who were affected by the closures during 2020 (IMF 2020c).

Figure 9. WAEMU: Education Spending and Outcomes

Sources: IMF staff estimates; World Bank.
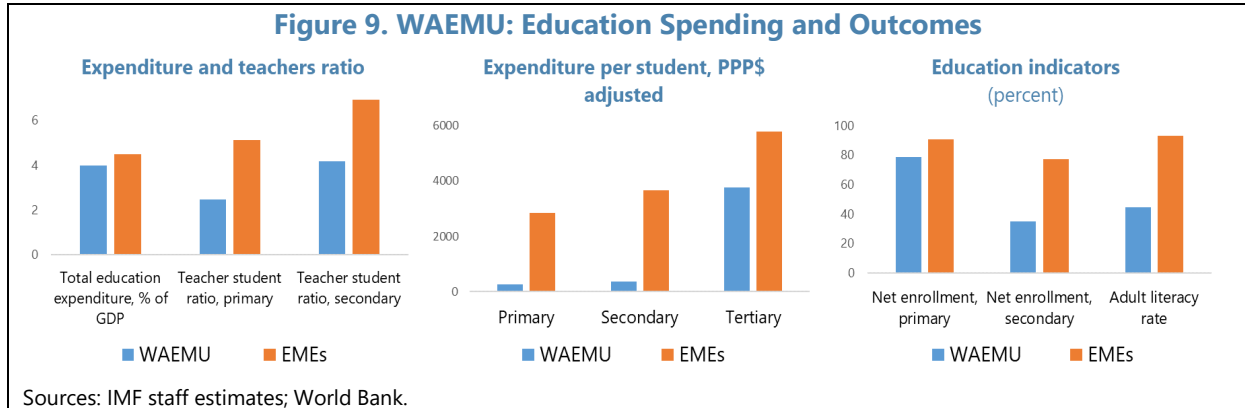
35.   Proactive policies to bring kids back to school could mitigate potential long-term effects of the disruption in the process of human capital accumulation that occurred during school closures. For instance, governments should closely monitor re-enrollment and attendance by different groups and underprivileged communities (e.g. girls, students from lower-income families or regions) or senior students. In addition, given the learning loss in 2020 due to school closures, policies aiming at keeping students in schools in coming years (thereby alleviating risks related to dropouts and lack of enrollment) should be guided by assessments of students' skills and needs in the post-pandemic period. This could ensure that students can keep up with the new school year and become more likely to continue their education. In this regard, remedial programs (before or after school),[9] modified schedules, adjusting/extending school years, continuing distance learning in parallel to schools re-opening can help the WAEMU put the process of human capital accumulation back on track (UNICEF 2020, Gopinath 2021, and Kaffenberger 2021).

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[9] Remedial programs aim to close the gap between what students know and what they are supposed to know.

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AN ANALYSIS OF MEDIUM-TERM REGIONAL FISCAL TARGETS IN THE WAEMU[1]

This paper reviews the calibration of regional debt and deficit ceilings considering the macroeconomic trade-offs and risks involved. Overall, it seems advisable to maintain the two ceilings at their previous levels. The 70 percent of GDP debt ceiling seems to strike the right balance between growth and fiscal prudence considerations. Model-based simulations show that raising the deficit ceiling from 3 to 4 percent of GDP would likely undermine domestic and external stability, except in very specific circumstances, that is, if access to external financing is unconstrained and significant progress in fiscal transparency is achieved.

A. Introduction

1.   In the aftermath of the deep crisis caused by the COVID-19 pandemic, the WAEMU authorities are revisiting the regional fiscal framework that will guide policy over the medium-term. The fiscal framework includes, among other features, convergence criteria at the regional level for debt (ceiling of 70 percent of GDP) and the overall deficit (ceiling of 3 percent of GDP).[2] These criteria, which are supposed to be complied with after a convergence period, have been suspended in the context of the crisis. The WAEMU commission is expected to make a proposal to revise the current framework of fiscal rules by the end of 2021. In addition, in June 2021, a decision was taken at the ECOWAS level (15 countries, including the 8 WAEMU countries) to maintain the current debt and deficit numerical targets (of 70 percent of GDP and 3 percent of GDP), but adopt a more gradual convergence path, with a majority of countries expected to reach the 3 percent deficit ceiling by 2024.[3] The reflection on a possible revision of the fiscal rules will need to balance a number of objectives, including weighing large development needs and associated demands for higher public spending with fiscal prudence to preserve sustainability.

2.   A revision of the fiscal rules framework can encompass several dimensions, but this chapter focuses exclusively on the calibration of the debt and deficit ceilings. Other dimensions including the selection of rules as well as supporting arrangements and institutions such as enhancements in public financial management and monitoring and enforcement mechanisms were discussed in detail in last year's Article IV consultation (Nguyen-Duong and Selim, 2021). Moreover, the chapter does not examine the duration of the convergence period, but rather focuses on the fiscal targets once the convergence is achieved.

3.   The paper is divided in two main sections. In the first section, the paper discusses the

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[2] As of 2020, all WAEMU countries had fiscal deficits above 3 percent of GDP. Only Guinea-Bissau's debt exceeded the 70 percent of GDP ceiling.

[3] WAEMU and ECOWAS processes do not necessarily need to be identical or aligned.

calibration of the debt ceiling following different approaches. It also analyzes whether there is scope to prudently increase debt levels in the region. The second section of the paper considers the calibration of the deficit ceiling and the macroeconomic implications of possible revisions of the ceiling using a structural macroeconomic model. One important caveat to bear in mind is that the chapter focuses mostly on the regional implications of revisions to fiscal rules. Country-specific considerations—outside the scope of the paper—are also crucial and should also be taken into account if the rules were to be revised.

4.   **This paper does not discuss the possible differentiation of member states' ceilings within the single regional ceiling**. The analysis presented in this chapter focuses on supranational rules from a regional perspective with a view to preserving debt sustainability, supporting growth and fostering external stability at the union level. It is possible to envisage some differentiation of the ceilings across countries. Although this exercise is out of the scope of the chapter, some considerations should be kept in mind. There is little historical precedent to rule differentiation within a currency union or federation. In fact, uniform rules across member states facilitate fiscal coordination, which is essential to prevent negative spillover effects and preserve external sustainability at the regional level. In addition, in the context of WAEMU member states, it may be difficult to calibrate country-specific debt ceilings due to a number of constraints, not least data availability. Nevertheless, the analysis presented here does not preclude such differentiation. Member states could, for instance, pursue different debt anchors at the country-level, while maintaining an aggregate debt ceiling at 70 percent of GDP at the regional level. A more comprehensive analysis is needed to assess the benefits and risks of such differentiation in the case of the WAEMU.

B.   Calibration of the Debt Ceiling

5.   **This chapter follows a sequential approach to calibrate fiscal rules in the WAEMU, which starts with obtaining estimates for the debt anchor and subsequently infer the associated fiscal deficit ceiling.** This sequential approach to calibration is further explained in IMF (2018). The first step of the exercise is to estimate the debt anchor, which is the level of debt towards which countries are expected to converge in the medium to long term. To estimate the debt anchor, three approaches are used: i) one based on the calculation of a debt limit above which dynamics become explosive, from which the anchor is derived given a safety margin or buffer; ii) the second approach focuses on the debt level that would maximize growth in the context of a simple model; iii) in the final approach, the debt anchor is obtained based on the current IMF's debt sustainability framework (IMF, 2018). These approaches try to capture the fundamental tradeoff between the need to keep debt levels in check to foster economic resilience and market confidence versus the competing objective of allowing space for borrowing to finance the large development needs.

Approach 1: "Safe" Debt Estimate

6.   **The first approach uses a method based on precautionary considerations to calibrate the debt anchor for WAEMU countries.** The approach is presented in detail in IMF (2018). The

"safe" debt level is defined as the debt-to-GDP ratio that ensures that debt dynamics remain under control even if adverse economic shocks occur. The approach is based on two main principles. Firstly, we assume that there is a point beyond which debt dynamics can spiral out of control, which we call a maximum debt limit. The second principle is that the fiscal framework should aim at keeping debt well below this limit. Because countries are vulnerable to significant macroeconomic and fiscal shocks, including changes in market sentiment, there must be a sufficient safety margin between the debt anchor and the debt limit.

7.   In that context, the debt anchor is measured as the difference between the debt limit and the safety buffer. Therefore, the analysis entails three separate steps: (i) first, an estimate of the maximum debt limit is obtained; (ii) then, we proceed to estimate the required safety margin; (iii) and finally the debt anchor is inferred as the debt limit minus the safety margin. More specifically, the required safety margin is estimated through stochastic simulations. To do so, the distribution of macroeconomic and fiscal shocks faced by the country in the past is estimated. Subsequently, future debt trajectories under these shocks are simulated over a 6-year horizon. This creates a fan chart of debt realizations, which allows for the calibration of the debt anchor and calculation of the probability that public debt would exceed the maximum debt limit in the medium-term.

Estimating a Regional Debt Limit for WAEMU Countries

8.   One approach to calculate such debt limit is based on the principle of "fiscal fatigue" (Gosh et al., 2013) and consists in estimating the limit above which debt cannot be stabilized in times of fiscal stress. Policymakers cannot realistically claim that they will do "whatever it takes" to generate primary surpluses sufficiently large to stabilize debt in an unfavorable macroeconomic environment. This may be because very high primary surpluses are politically unacceptable or economically unachievable (due, for instance, to Laffer curve effects). The maximum debt level is reached when negative macroeconomic conditions, measured by the interest-growth differential and the exchange rate, create an upward pressure on debt, but the government cannot increase further the primary balance to offset this pressure. We approximate the maximum debt level that could be stabilized by calculating the ratio of the maximum achievable primary balance to the interest rate-economic growth differential (r-g) under stress:

$$D^* = {PB_{max}}/{(r - g)_{stress}}$$

9.   Using historical evidence for WAEMU countries, we estimate a debt limit of about 80 percent of GDP using this approach. Based on data from the April 2021 vintage of the WEO database over the period 2000-20, we estimate that the 95th percentile of the distribution of the interest growth differential (based on effective interest rates on debt) for countries in the region stands at around 3.3 percent. Regarding the maximum achievable primary balance, using historical evidence from the WEO dataset since 1996, we calculate the 95th percentile of the distribution of primary balances for WAEMU countries and find a value of 2.7 percent of GDP. This larger maximum primary surplus would result in a debt limit of 80 percent of GDP.

10.   An alternative approach to estimate the debt limit is based on the principle of "debt-carrying capacity." More specifically, the approach focuses on the ratio of interest expenses to revenues (excluding grants), as an indicator of the ability to repay debt. Arguably, for sub-Saharan African countries where revenue mobilization is low, a measure of this ability to repay debt is highly relevant for sustainability. In fact, empirical evidence shows that the interest to revenue ratio is tightly linked to fiscal stress (Bentum, David, Slavov, and Sode, 2021). In addition, econometric models applied to emerging markets and developing economies suggest that thresholds for the ratio that would signal upcoming fiscal stress would range from 16 to 19 percent. Using these thresholds for the interest to revenue ratio, denoted τ, it is possible to obtain the associated debt limit level beyond which the risk of fiscal stress increases significantly by using the following relationship:

$$D^* = \tau \left(\frac{Revenues/GDP}{Effective\ Interest\ Rate} \right)$$

Using the average revenue (excluding grants) to GDP ratio and average effective interest rates over 2015-2019 for the WAEMU from the WEO database, one would obtain the debt limits outlined in Table depending on the threshold used.

Table 1. WAEMU: Estimates of the Debt Limit		
	Threshold	
	16%	19%
Revenue (excluding grants)/GDP	14.8%	14.8%
Effective Interest Rate	3.2%	3.2%
Debt Limit	**74.0%**	**87.9%**
Sources: WEO Database and IMF Staff estimates.		

11.   Overall, the results indicate that a debt limit of around 80 percent of GDP for the WAEMU seems a reasonable estimate. The approaches based on fiscal fatigue and debt servicing capacity yield broadly similar results. One important caveat to these calculations of the debt limit is that key inputs such as the maximum primary balance or the interest-growth differentials were estimated based on historical information. They are subject to uncertainty and may change in the near future in manners that differ from historical patterns (see robustness checks below).

Estimating the Safety Buffer
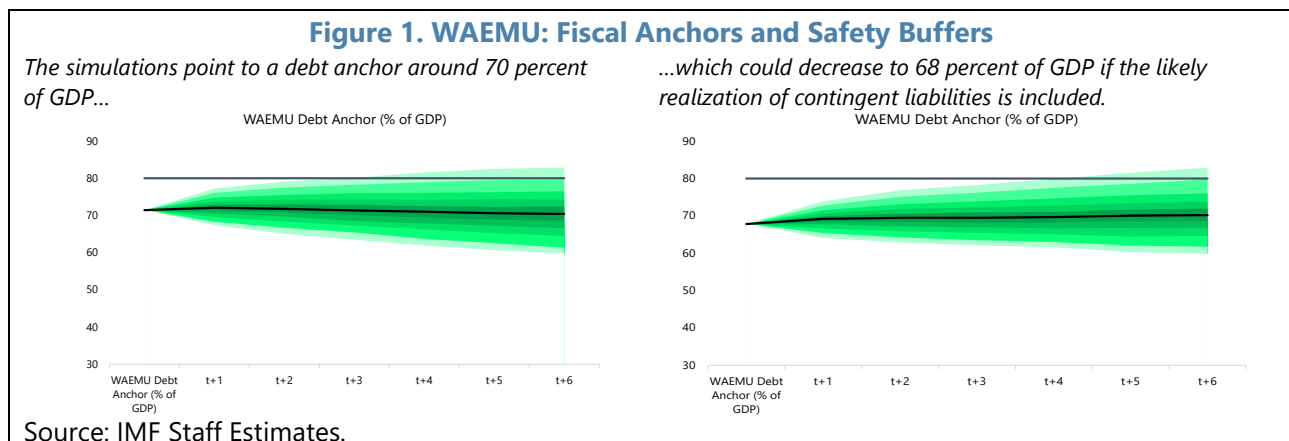
12.   Having computed a debt limit, we now turn to estimate a required safety margin based on the history of macroeconomic and fiscal shocks that countries in the region tend to face. The buffer reflects two factors: i) the history of macroeconomic shocks for countries in the region, ii) contingent liabilities, estimated at 3 percent of GDP every 6-years based on the evidence

discussed in Bova et al. (2019). We start by estimating the distribution of macroeconomic and fiscal shocks facing WAEMU countries derived from a multivariate normal distribution based on annual data at the regional level for key macroeconomic and fiscal variables (namely, real GDP growth, the primary balance, real interest rates and the real exchange rate).[4] The exchange rate variable is particularly important since it can drive large and sudden changes in debt ratios. These shocks are subsequently used to perform simulations of future debt trajectories based on the standard debt dynamics equation and a fiscal reaction function. The resulting debt paths are presented in a fan chart (see Figures below). Each trajectory represents the evolution of debt under a certain shock scenario. The debt anchor is the initial point of the different simulations presented below and it is calibrated, so that the fan chart stays below the debt limit over a 6-year horizon with a high probability.

13.   The simulations point to a debt anchor of around 70 percent of GDP if policymakers are willing to accept a 10 percent probability of breaching the maximum debt limit in the medium-term. An anchor of around 70 percent of GDP is considered a "safe" level of debt, ensuring that countries in the region can withstand negative shocks without breaching the debt limit (assumed to be 70 percent of GDP) by the 6th year with very high probability.

14.   The anchor would be slightly lower if one accounts for the possible realization of contingent liabilities. Certain types of transactions may lead to a disconnect between the evolution of deficits and debt in the standard debt dynamics equation levels (the so-called stock flow adjustments or SFAs). These include the likely realization of contingent liabilities (e.g. arising from the recapitalization of a bank or state-owned enterprise); off budget operations; or other large operations in financial assets that are recorded below the line. Bova et al. (2019) based on a comprehensive dataset of contingent liability realizations in advanced and emerging markets for the period 1990–2014 find that on average a country would be expected to have experienced a contingent liability realization every 12 years or so with a fiscal cost of 6.1 percent of GDP per episode. In the context of our simulations, if we consider that the expected realization of contingent liabilities is 3 percent of GDP over 6 years, the implied debt anchor would be 68 percent of GDP.

Figure 1. WAEMU: Fiscal Anchors and Safety Buffers

The simulations point to a debt anchor around 70 percent of GDP...

...which could decrease to 68 percent of GDP if the likely realization of contingent liabilities is included.

Source: IMF Staff Estimates.

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[4] The estimation is based on data from the WEO database, covering the period 2000-20.

15.   Overall, the analysis suggests a debt anchor of around 70 percent of GDP, but there is uncertainty around that level. This corresponds to a debt limit of 80 percent of GDP minus a safety buffer of 10 percent of GDP, deemed appropriate for the region given the history of shocks and expected realization of contingent liabilities. Nevertheless, it is important to bear in mind that the size of the safety buffer was estimated based on historical information. Going forward, there might be important risks and structural trends that would call for a wider safety margin, such as for example monetary policy normalization in Advanced Economies pushing up global interest rates. Robustness checks show that a 100 basis points increase in interest rates relative to recent levels would increase the size to the buffer to over 16 percent of GDP (bringing the debt anchor below 65 percent of GDP if a debt limit of 80 percent of GDP is considered). Nonetheless, there is also uncertainty about some elements of the calculation of the debt limit, which may support a higher debt limit than 80 percent of GDP. For example, if efforts to mobilize additional domestic revenues materialize and the revenues excluding grants to GDP ratio used as an input in Table 1 increase from 14.8 to 16 percent of GDP, the debt limit would be revised upward to 95 percent of GDP, keeping other things equal.

Approach 2: Growth-Maximizing Debt Level

16.   Another approach to determine the appropriate debt anchor attempts to estimate a debt ratio that maximizes growth. This approach differs from the one discussed in the previous section, as it places greater emphasis on increasing debt to finance development needs rather than focusing on limiting debt to foster resilience and fiscal prudence. This chapter uses a theoretical model constructed by Checcherita-Westphal and others (2014) to derive the level of public sector debt beyond which debt starts to have a negative effect on growth, even when considering the positive effect of public investment (financed through additional debt) on GDP.

17.   The optimal debt-to-GDP ratio depends on how additional public capital translates to higher GDP levels (the elasticity of the public capital stock). The level of public sector debt level that maximizes output growth is derived in an infinite horizon model with flexible prices and wages with a production function that includes labor (L); private capital (K); and public capital (K_g). Output is given by the production function below, where α is the output elasticity of the public capital stock:

$$Y = L^\gamma K^{1-\gamma}\left(K_g/K\right)^\alpha$$

Assuming that public debt is used exclusively for public capital financing ("golden rule"), the optimal debt to GDP ratio (D^*) is given by the following expression and depends crucially on the output elasticity of the public capital stock (α).

$$D^* = (\alpha/(1-\alpha)^2)^{1-\alpha}$$

18.   The elasticity is estimated econometrically using pooled data for WAEMU countries over the period 1960-2015. We use data from the Penn-World Tables version 10.0 (Feenstra and others, 2015) and from the IMF's Investment and Capital Stock Dataset to estimate the parameter

α.[5] We follow Checcherita-Westphal and others (2014) and use two different specifications. In the first model, output and labor are expressed as a share of the private capital stock. In the second model variables are expressed in per capita terms (except for the ratio of public capital to private capital). The results are presented in Table 2.

19.   Using this "optimal debt" approach, the debt anchor would range between 65 and 84 percent of GDP. All regressions yield point estimates of around 0.31, which would imply an optimal debt to GDP ratio target of about 74 percent. Considering a 90 percent confidence interval around the point estimate (that is, an upper bound of 0.34 and a lower bound of 0.28) would yield optimal debt to GDP ratios ranging from 65 percent to 84 percent.

Table 2. WAEMU: Estimates of the Output Elasticity of Public Capital

	(1) ln(Y/K)	(2) ln(Y/L)	(3) ln(Y/K)	(4) ln(Y/L)
ln(Kg/K)	0.312***	0.312***	0.307***	0.307***
	[0.016]	[0.016]	[0.016]	[0.016]
ln(L/K)	0.366***		0.377***	
	[0.021]		[0.021]	
ln(K/L)		0.634***		0.623***
		[0.021]		[0.021]
Trend			0.003***	0.003***
			[0.001]	[0.001]
Constant	0.380***	0.380***	0.273***	0.273***
	[0.016]	[0.016]	[0.041]	[0.041]
Observations	480	480	480	480
R-squared	0.738	0.659	0.743	0.664

Standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

Source: IMF Staff Estimates

Approach 3: Thresholds Extracted from the Debt Sustainability Analysis

20.   The Bank-Fund's debt sustainability framework (DSF) for Low Income Countries can also provide insights on the debt anchor for WAEMU countries. The framework includes the estimation of indicative thresholds and benchmarks for different debt burden indicators (for debt levels and debt service), which vary depending on whether the country is classified as having weak, medium, or strong debt carrying capacity. In turn, the classification of debt carrying capacity is based on a composite measure that includes indicators of institutional strength (CPIA index), economic growth, reserve coverage, remittances, and world growth.

21.   Although the LIC DSF does not include explicit thresholds for total nominal debt ratios, it is possible to infer such limits based on the past ratio of present value to nominal debt. Debt stock indicators used in the LIC DSF methodology are expressed in net present values (NPV) to reflect the grant element, or concessionality, of the debt (IMF 2018). The NPV of public

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[5] One shortcoming of using these data sources is that they do not necessarily reflect the rebasing of GDP that occurred in seven WAEMU countries since 2018, which may affect estimates of output, investment, and the capital stock. Nevertheless, long times series for the variables of interest constructed from the rebased GDP series are not available.

debt is calculated as the discounted sum of future debt repayments (principal and interests). This can be proxied as the product of the nominal stock of debt and a discount factor. Using this approximation, it is possible to multiply the 2020 ratio of nominal to NPV debt by the applicable LIC-DSF benchmark to obtain an implicit threshold for a country's nominal debt ratios (Table 3). Such a value provides an estimate of the maximum level of nominal debt above which a country would very likely breach the LIC-DSF benchmarks, given current assumptions concerning the concessionality of the debt.

Table 3. WAEMU: Implied Nominal Debt Limits					
	Debt-Carrying capacity 1/	Benchmark Public debt/GDP 2/ [a]	2020 public debt to GDP 1/ [b]	2020 PV of public debt to GDP 1/ [c]	Ratio of public debt and PV value of public debt [c/d]	Implied upper limit on public debt [a*d]
Benin	Medium	55	45.0	39.5	1.14	63
Burkina Faso	Medium	55	46.1	38.8	1.19	65
Cote d'Ivoire	Medium	55	44.7	40.8	1.10	60
Guinea-Bissau	Weak	35	78.4	65.7	1.19	42
Mali	Medium	55	44.1	38.4	1.15	63
Niger	Medium	55	41.7	35.0	1.19	66
Senegal	Strong	70	67.6	59.5	1.14	80
Togo	Medium	55	67.1	61.4	1.09	60
Average implied upper limit on nominal public debt (weighted by share of 2020 WAEMU GDP)						65

1/ As included in the staff report.
2/ As reported in the LIC-DSF Guidance note.
Source: IMF Staff Estimates

22.   Under simplifying assumptions, the public sector debt benchmarks from the DSF suggest a debt threshold in nominal terms of around 65 percent of GDP for the WAEMU region. Most countries in the region are classified as having "medium" debt carrying capacity with an associated public sector debt benchmark in net present value terms of 55 percent of GDP, except for Guinea-Bissau (which is classified as having weak debt carrying capacity) and Senegal (classified as having strong debt carrying capacity). Converting the public sector debt thresholds from net present value to nominal terms for each country and aggregating by using the countries' shares in regional GDP results in a nominal debt benchmark of 65 percent of GDP (while individual country limits range from 42 to 80 percent of GDP in nominal terms).

Putting All These Approaches Together

23.   Overall, changing the regional debt ceiling presently embedded in the fiscal framework does not seem to be warranted. Considering the simple average and median of estimates of different approaches, the 70 percent of GDP ceiling for the region is appropriate and strikes the right balance between fiscal prudence and growth considerations.

24.   While the analysis presented in this chapter focuses on supranational rules with a regional perspective, it could be possible to envisage some differentiation of the ceilings across countries. The analysis shows that a 70 percent of GDP debt ceiling is appropriate at the aggregate level. But this does not necessarily preclude a differentiation of ceilings across countries within this aggregate. This differentiation could be motivated by the fact that WAEMU countries

have different capacity to repay debt and different initial conditions. Recently, some proposals have been made in this direction in the context of the Euro Area (Martin, Pisani-Ferry, and Ragot, 2021). Although this exercise is out of the scope of the chapter, two considerations should be kept in mind. First, there could be difficulties in implementing such differentiation in practice. There is little historical precedent to rule differentiation within a currency union. It could make fiscal policy coordination and monitoring more complex. Second, in the context of WAEMU member states, it may be difficult to calibrate country-specific debt ceilings due to a number of constraints, not least data availability. For instance, when estimating the debt limit, it could be difficult to ascertain how maximum primary balances and interest-growth differentials under stress vary across countries.

C.   Calibration of the Deficit Ceiling

From Debt Anchor to Overall Deficit Ceiling

25.   Absent stock-flow adjustments, the current deficit ceiling of 3 percent of GDP would stabilize debt at around 40 to 50 percent of GDP. The overall deficit (OB) that would make debt converge in the absence of shocks can be obtained by using the standard relationship linking the debt as a share of GDP (D) and nominal GDP growth (θ):

$$OB = \left(\frac{-\theta}{1 + \theta}\right) D$$

Assuming that potential medium-term real growth ranges between 5 to 6 percent for countries in the region in line with current IMF projections and taking the BCEAO's objective of an inflation rate of 2 percent (+/- 1 percent band), would yield an estimate of nominal potential growth (θ) rate of between 6 and 9 percent.[6] This implies that the 3 percent of GDP ceiling embedded in the current framework would stabilize debt between 40 to 50 percent of GDP, which is close to current debt levels for several countries in the WAEMU.

26.   A modestly higher deficit ceiling of 4 percent of GDP may be compatible with a debt ceiling ranging from 50 to 70 percent of GDP. Given the previously discussed assumptions about potential nominal growth, a 4 percent deficit ceiling would stabilize debt at around 70 percent of GDP if a nominal growth rate of 6 percent is assumed. Considering a nominal growth rate of 8 percent, a 4 percent of GDP deficit would stabilize debt at 54 percent of GDP.

27.   The rest of the chapter analyzes the macroeconomic implications of raising the regional deficit ceiling to 4 percent of GDP. International experience with deficit ceilings suggests that they tend to become a "focal" point with countries converging to the ceiling over time (from initial levels above and below it). Therefore, the shift to a 4 percent of GDP fiscal deficit ceiling would likely increase the deficit path in the region (the Annex discusses the consequences of a tax-financed

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[6] IMF staff estimates also indicate that in the absence of further mitigating policies, medium-term potential real GDP growth in the WAEMU could have been reduced by up to 1 percentage point due to the scarring effects of the pandemic (Selected Issues Paper).

increase in expenditure). The macroeconomic implications can be grouped in three main categories:

- **External stability**. Permanently wider fiscal deficits could have implications for the sustainability of the currency peg in the WAEMU, given that they would likely constitute a net drain on international reserves. Larger deficits would have a direct impact on reserves through higher imports, but could also have adverse effects on competitiveness through real exchange rate appreciation.

- **Absorptive capacity of the regional market and crowding-out effects.** At least part of the wider fiscal deficits would likely need to be accommodated by the regional market. Given the lack of liquidity in the regional market for sovereign bonds (IMF 2021), additional borrowing requirements could create financial pressures, particularly if banks (by far the most important players in the market) cannot accommodate them. This could result in a tightening of financial conditions and crowding-out of financing for the private sector. Staff analysis indicates that a 1 percent increase in government securities held by regional banks as share of M2 is on average associated with a 3.6 percent decline in the subscription rates of sovereign bonds' issuances (Figure 2). This suggests that large volumes of additional domestic borrowing, if they materialize, could test the absorption capacity of regional markets.

Figure 2. WAEMU: Stock-Flow Adjustments and Regional Market Absorptive Capacity

Change in public sector debt and SFAs, 2013–26 (percent of GDP)

Government securities held by domestic financial sector and subscription rates of sovereign bond issuances.

Source: IMF Staff Estimates.
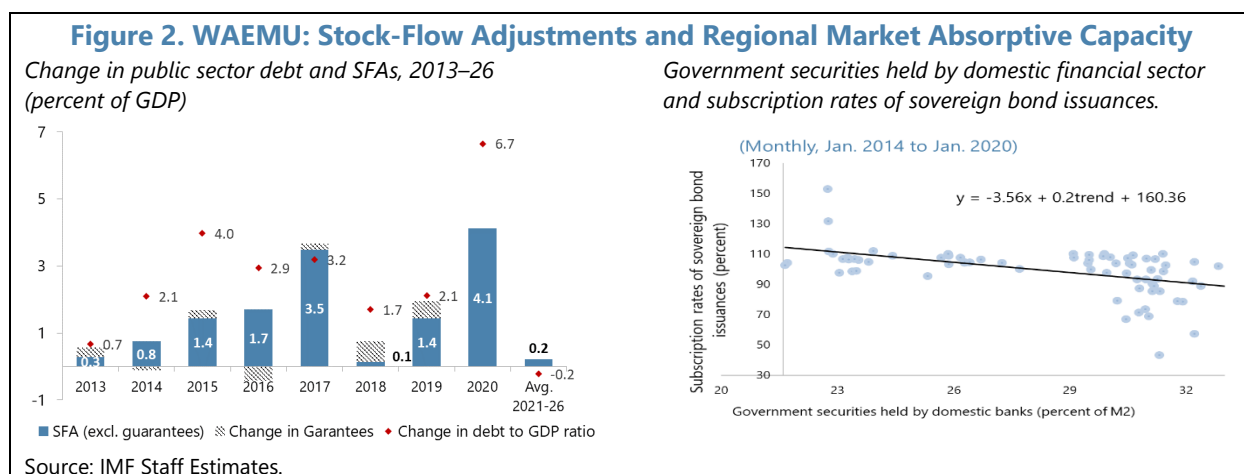
- **Effect on debt dynamics.** Higher deficits are likely to result in more elevated debt ratio trajectories, although the effect may also depend on how the deficit is used and whether it finances growth-enhancing spending. Another important consideration is whether the fiscal deficit, as defined by the rule, captures all the debt creating flows. A number of fiscal operations, so-called Stock-Flow Adjustments (SFAs), create a gap between "above the line" deficits and the evolution of debt, beyond the role played by automatic drivers of debt such as growth rates, interest rates, and the exchange rate.[7] These SFAs include off-budget and/or "below the line" operations (acquisitions of financial assets) as well as the realization of contingent liabilities. On average, Staff estimates indicate that SFAs for the WAEMU region typically stood around 1 percent of GDP between 2013-2019 (Figure 2). Preliminary estimates for 2020 suggests that

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[7] SFAs may also be affected by data coverage issues (such as different perimeters in the coverage of deficits and debt statistics) and therefore relate to statistical compilation practices in the member countries.

SFAs were historically high in part due to accounting issues (such as the timing of disbursements of investment projects)[8] IMF staff's baseline projections typically assume convergence to 3 percent deficit ceiling without large SFAs (on average they would amount to 0.2 percent of GDP over 2021-2016).

28.   The rest of the analysis will center around two policy options. These two options are assessed using a structural macroeconomic model (Box 1). The difference between these two options pertains to how the deficit is measured:

- *Option 1: 4 percent deficit ceiling measured "above the line".* The first option considers an increase in the deficit ceiling to 4 percent of GDP measured "above the line" (as revenue minus expenditure). This implies that the definition of the deficit would remain the same as the one prevailing under the current rule, but there is simply an increase in the ceiling from 3 percent of GDP to 4 percent of GDP. Relative to IMF staff baseline projections, this option would imply higher financing needs of, at least, 1 percent of GDP.

- *Option 2: 4 percent deficit ceiling measured "below the line".* The second option focuses on an increase in the deficit ceiling to 4 percent of GDP, but with the deficit redefined "below the line"—as the change in financial liabilities minus the change in financial assets.[9]

Option 1: raising the fiscal deficit ceiling to 4 percent of GDP "above the line"

29.   A structural model is used to simulate four scenarios that illustrate the effects of the 4 percent of GDP deficit target under alternative assumptions regarding the composition of financing and spending.[10] The scenarios differ in three main dimensions: i) the composition of spending (government consumption versus investment or spending to increases potential output); ii) whether the additional deficit is financed by external resources of whether it is financed in the regional market iii) whether stock flow adjustments are contained or whether 1 percent of GDP in SFAs are added. A summary of the assumptions is presented in Table 4:

- The first scenario assumes a gradual convergence to an overall deficit of 4 percent of GDP by 2024 and the deficit would stay at that level permanently thereafter (1 percent of GDP higher

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[8] Accounting issues related to the timing of disbursements of investment projects or in the case of Cote d'Ivoire, the use of cash accounting for the recording of debt, while the recording of deficits is done on an accrual basis are estimated to have amounted to 0.8 percent of the regional GDP in 2020. Moreover, below the line operations such as credit lines provided by governments are estimated to have reached about 0.3 percent of GDP in 2020. Other identified financial operations and accumulation of financial assets are estimated to amount to 0.6 percent of GDP.

[9] This type of rule differs from the debt accumulation rule discussed in paragraph 22 of Nguyen-Duong and Selim (2021). The debt accumulation rule, popularized in the European framework as the 1/20th debt benchmark, is a rule that targets a certain annual reduction in the debt ratio relative to a target; complying with this rule can be difficult because (1) the debt ratio is highly sensitive to macroeconomic shocks (including GDP growth, inflation, and exchange rate), (2) the corresponding deficit targets change every year, and (3) this rule creates some confusion between the concepts of operational rule and anchor. By comparison, the fiscal deficit rule measured "below the line" is a more straightforward rule that targets a fixed fiscal deficit ratio that captures all changes in financial liabilities.

[10] The scenarios focus on the macroeconomic implications of an increase in the deficit mainly translated as higher spending without significant changes relative to the baseline in terms of additional domestic revenue mobilization. The annex considers a set of simulations that include changes in taxes and their implications.

than the baseline deficit ceiling of 3 percent of GDP). Moreover, half of the permanent increase in the deficit is devoted to an increase in public investment, which would boost medium-term potential output. Under this first scenario, the total increase in the deficit would be financed by external resources (additional donor funds and access to international markets).

- The second scenario considers the same convergence path to a permanent increase in the deficit to 4 percent of GDP, externally financed, but with the additional spending geared entirely towards current expenditures.

Box 1. The Structural Model Used for the Simulations

A structural general equilibrium model, akin to the one described in Andrle and others (2015), is used to assess the macroeconomic effects of the higher deficit scenarios relative to the IMF WEO baseline. Simulations are produced using the African version of the Flexible System of Global Models (FSGM) calibrated to the WAEMU region. In the model, inflation, imports and GDP are determined by aggregated demand and potential output. Private consumption depends mainly on current income (liquidity constraint households) and, to a lesser extent, on the interest rate. Private investment depends on the gap between current and desired capital stock (a function of financial conditions and potential output). Domestic financial conditions are set by the central bank in the form of a domestic nominal interest rate, equal to the euro area interest rate plus an interest premium. Potential output depends on labor supply, private capital stock, and a productivity term that increases with public capital stock.

In addition to standard model features, the simulations also assume that monetary policy adjusts the domestic interest rate to the level of official reserves. To guarantee the fixed nominal exchange rate regime, official reserves changes match any discrepancy between the current account and net private capital outflows. To ensure the sustainability of the exchange rate regime, monetary policy adjusts the domestic interest rate to the level of official reserves. Therefore, the interest premium in the model captures policy decisions to mitigate changes in official reserves. For instance, when net capital outflows or a more deteriorated trade balance reduce official reserves, the central bank increases the nominal interest rate to induce capital inflows in the short run and restore the trade balance in the medium run (import compression). Based on historical events, the simulations assume that the domestic interest rate increases by one percent for each reduction in official reserves representing one month of imports.

The model captures important general equilibrium effects that are not included in simpler reduced-form frameworks. As discussed above, the model features the monetary policy response to larger deficits, the reaction of capital flows, crowding-out effects of private spending, as well as the effects of public investment on potential output. Nonetheless, there are a number of caveats that should be considered when analyzing the model simulations. The model assumes that countries in the region do not face difficulties in getting access to external financing (either in the form of Eurobonds, external loans, or grants) at favorable rates. Rollover risk on external financing is not taken into account and it is assumed that access to external markets is maintained even with permanently higher deficits. Moreover, the estimates of effect of public investment on productivity are based on evidence from advanced economies. Finally, the import of content is assumed to be the same for consumption, private investment, and government investment.

- The third scenario considers the same convergence path to a permanent increase in the deficit to 4 percent of GDP with the additional spending geared towards current expenditures, but mostly domestically financed with an ensuing increase in domestic interest rates (a risk premium increase of 50 basis points relative to baseline).

- Finally, the fourth scenario, envisages a convergence to a deficit ceiling of 4 percent of GDP by 2024, but also takes into account the stock-flow adjustments and therefore the "actual" deficit would de facto increase by 2 percent of GDP relative to the baseline deficit ceiling of 3 percent of GDP. The increase would be entirely devoted to additional public consumption and a large share of financing in the regional market, with an ensuing increase in the domestic rates (a risk premium increase of 80 basis points relative to the baseline).

Table 4. WAEMU: Key Assumptions Under Different Scenarios for an Increase in the Deficit Ceiling Under Option 1			
	Deficit	Expenditure composition	Financing
Scenario 1: No stock-flow adjustments (SFAs); high quality spending; external financing	Convergence to 4 percent of GDP by 2024 (instead of 3 percent in baseline)	Half of the increase in the deficit relative to baseline is due to higher public investment.	Higher deficit relative to baseline financed fully externally, no effect on domestic rates.
Scenario 2: No stock-flow adjustments; lower quality spending; external financing	Convergence to 4 percent of GDP by 2024	Does not increase relative to baseline.	Higher deficit relative to baseline financed fully externally, no effect on domestic rates.
Scenario 3: No stock-flow adjustments; lower quality spending; domestic financing	Convergence to 4 percent of GDP by 2024	Does not increase relative to baseline.	Recourse to domestic financing leads to increase in interest rates (risk premium) by 50 basis points.
Scenario 4: Includes stock-flow adjustments of 1 percent of GDP; lower quality spending; domestic financing	Convergence to 4 percent of GDP, but SFAs bring the de facto deficit to 5 percent of GDP.	Does not increase relative to baseline.	Recourse to domestic financing leads to increase in interest rates (risk premium) by 80 basis points.

30.   The macroeconomic implications differ significantly across scenarios. The various scenarios can be compared depending on the macroeconomic variable of interest, namely: GDP growth, the debt to GDP ratio, the trade balance to GDP ratio, or reserve coverage (in months of imports):

- **Growth**. *The comparison of scenarios shows that, except when the deficit is financed externally and used to finance capital expenditure, the output effects are worse than under the baseline in the medium term.* Under the first scenario as half of the additional public spending is devoted to public investment, prospects for potential output are enhanced, which generates a positive externality on private productivity and helps to attract foreign investment, allowing the central bank to build foreign reserves and ease domestic financial conditions. Overall, real GDP would increase by over 0.5 percent relative to the baseline over the near to medium-term, but long-term effects would be larger with GDP increasing by 0.7 percent by 2031 (Figure 3). In contrast, under the second scenario, assuming that the additional public spending is devoted to public

consumption only, with no positive externalities on private productivity, the medium-term increase in GDP would be negligible. Under the scenarios 3 and 4 that rely on domestic financing, increases in the deficit fail to stimulate growth because of crowding-out and limited effects on potential output.[11] Deteriorated growth prospects reduce confidence and capital inflows, and the central bank tightens financial conditions to avoid depleting foreign reserves.[12] Output declines relative to the baseline would be substantial in the near-term reaching close of 1.5 percent in 2022 and 2023 in the scenario 4 that includes SFAs (Figure 3).

- **Debt dynamics.** *Convergence to a 4 percent of GDP deficit level could lead to significant debt increase if it is financed domestically and there are SFAs.* All scenarios would lead to higher debt levels as a share of GDP relative to the baseline given that they assume higher deficit levels and any positive effects on growth would be insufficient to fully offset the adverse effects on debt dynamics. The increase in debt levels would be particularly stark under the case where SFAs are included and the increase in the deficit is financed domestically. In scenario 4, debt would be about 8 percent of GDP higher than under the baseline by 2026 and 15 percent of GDP higher over the long run.

Figure 3. WAEMU: Effects of Different Scenarios on Growth and Debt

Source: IMF Staff estimates.
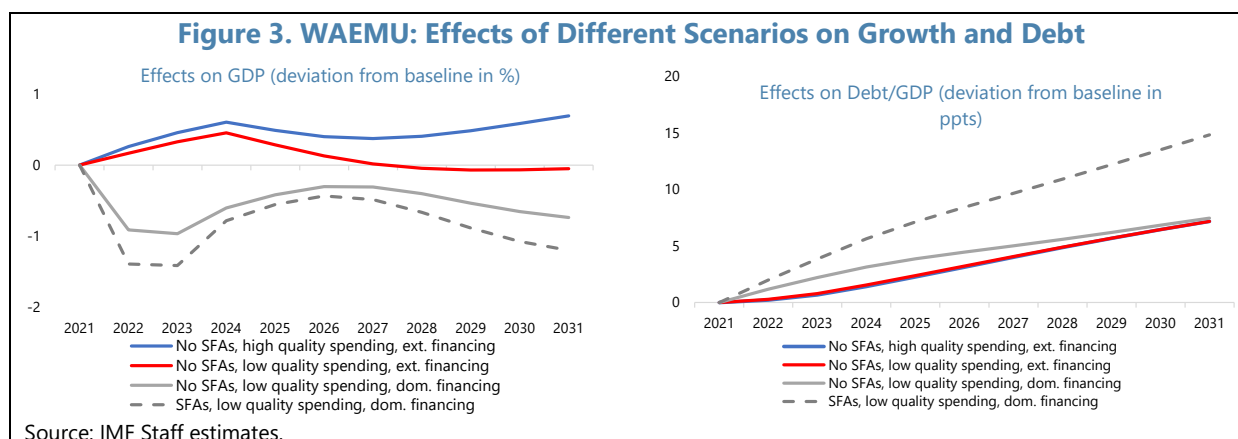
- **Trade balance.** *Higher fiscal deficits would modestly deteriorate the trade balance in the case where the deficit is financed externally, but under the scenarios with domestic financing the trade balance would improve due to import compression.* In scenarios 1 and 2, the trade balance would deteriorate as higher government expenditures and private investment generate larger imports (Figure 4).[13] Under the domestically financed scenarios (3 and 4), the trade balance would improve due to the lasting reduction of domestic demand, as the fixed exchange rate regime

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[11] As financing of the deficits takes place domestically, banks direct domestic savings toward public bonds and deprive firms of funds for investment. Consequently, private investment declines.

[12] The ensuing increase in interest rates attracts foreign capital and contracts private sector demand, including imports.

[13] Nonetheless, when the increase in the deficit is devoted entirely to consumption under scenario 2, the trade balance deterioration in the short run is smaller because of the smaller effects of the higher deficit on private investment (in the absence of the positive externality of additional public investment on potential growth). In the long run, the tradable sector may shrink as factors of production move to the non-tradable sector because of Dutch disease (inflation is higher leading to a deterioration in competitiveness), and the trade deficit may increase again.

prevents swift expenditure switching and monetary policy is tightened to protect reserves.

Figure 4. WAEMU: Effects of Different Scenarios on the Trade Balance and Reserves

Source: IMF Staff estimates.
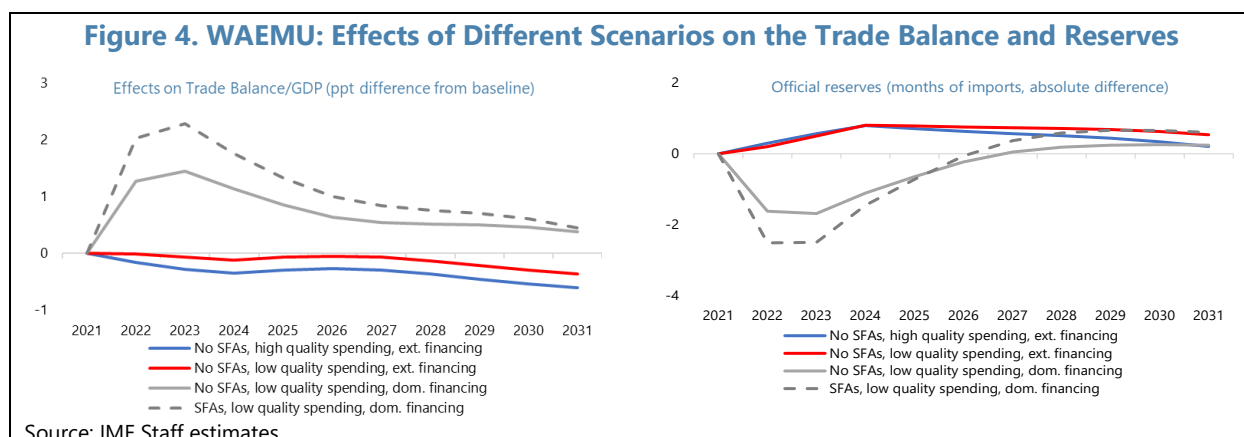
- ***Foreign exchange reserves.*** *Reserve coverage would fall significantly in the near term if the fiscal deficit is financed from the regional market.* When the permanent increase in the deficit is financed externally (scenarios 1 and 2), reserve coverage improves relative to the baseline by about 0.8 months of imports, because of strong capital inflows. Over the long term, as the trade balance deteriorates, reserve accumulation moderates (Figure 4). In the case where the permanent increase in the deficit to 4 percent of GDP is financed in the regional market without SFA (scenario 3), there is a reduction in net capital inflows in part because of diminished confidence, and consequently reserves fall. To mitigate it, the central bank tightens domestic credit conditions, such that the reserve coverage reduction is limited to about 1.5 months of imports over 2022-2024. Over the medium, as the trade balance improves so does reserve coverage. By comparison, in the case where the deficit is permanently increased to 4 percent of GDP and SFAs are taken into account (scenario 4), similar mechanisms are at play and the deterioration in reserve coverage relative to the baseline is even larger reaching 2.5 months of imports by 2023-24 and possibly undermining external stability, as reserves would fall well below the 3-months of imports reserve adequacy benchmark.

31. **Overall, the various scenarios suggest that two conditions are key for an increase in the deficit to lead to favorable regional outcomes: (1) reliance on (and unconstrained access to) external financing and (2) sound public financial management to reduce the size of SFAs.** External financing mitigates crowding-out effects and contributes to maintaining reserve coverage. Improvements in public financial management and transparency limit off-budget and below-the-line operations, ensuring that the de facto deficit ceiling is close to the "above the line" one and may also improve the quality of spending. Although the simulations show that these two conditions are the most essential, other conditions can also lead to more favorable outcomes. In particular, measures to ensure that the composition of additional spending is geared towards items that enhance potential output like investment would also create positive outcomes relative to the baseline. Table 5 presents an overview of the macroeconomic implications of the four different scenarios discussed above, as well as three additional scenarios, two of which will be presented in

detail below as they usefully highlight the importance of the two conditions (reliance on external financing and sound PFM).[14]
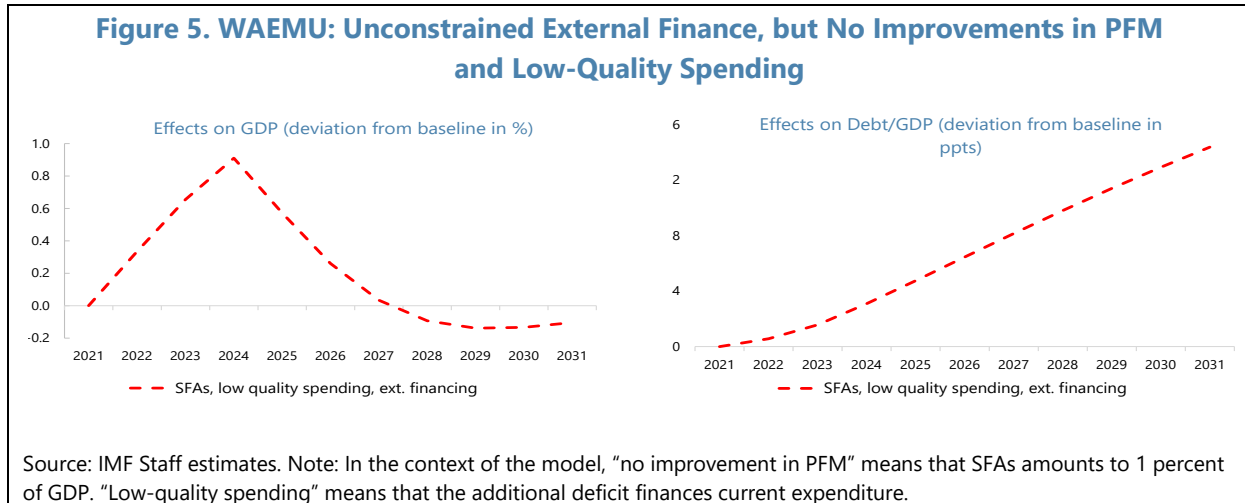
Table 5. WAEMU: Overview of Implications of Higher Deficit Ceiling							
	4 percent of GDP deficit de facto				5 percent of GDP deficit de facto (with SFAs of 1 percent of GDP)		
Type of spending/financing	*High quality/ ext. finance*	*Low quality/ ext. finance*	*Low quality/ dom. finance*	*High quality/ dom. finance*	*High quality/ ext. finance*	*Low quality/ ext. finance*	*Low quality/ dom. finance*
Scenario	*Scenario 1*	*Scenario 2*	*Scenario 3*	*Scenario 5 (not shown)*	*Scenario 6 (not shown)*	*Scenario 7 (not shown)*	*Scenario 4*
Policy option	*Options 1 or 2*	*Options 1 or 2*	*Options 1 or 2*	*Options 1 or 2*	*Option 2 exclusively*	*Option 2 exclusively*	*Option 2 exclusively*
GDP Growth	✓	✓	✗	✓	✓	✓	✗
Reserve Coverage	✓	✓	✗	✗	✓	✓	✗ ✗
Debt	✗	✗	✗	✗	✗ ✗	✗ ✗	✗ ✗

Source: IMF Staff Calculations. Checks indicates more favorable than baseline outcomes; and crosses indicate outcomes less favorable than the baseline.

32.   If these two conditions are not in place simultaneously, the higher deficit target of 4 percent of GDP could have adverse macroeconomic consequences. In this context, it is useful to consider two "uncooperative" equilibria. The first one considers that the possibility that the international community delivers on additional external assistance and more external financing is available, but authorities do not advance on PFM reforms and maintain low quality composition of expenditure. The second case considers that the authorities deliver on PFM reforms and high-quality spending, but access to external financing is constrained.

- *In the case where additional external finance is available, but there is no improvement in PFM (to eliminate SFAs) and spending remains of low-quality, public debt would be significantly higher*

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[14] The scenario that is not presented in detail in the text is Scenario 6 of Table 5 that encompasses an increase in the deficit to 5 percent of GDP because of SFAs, but where external financing is readily available to cover the additional financing needs and most of the additional public spending is devoted to high quality expenditures that boost potential GDP. The figures related to this Scenario are not included to facilitate exposition of the arguments in the rest of the paper and because this Scenario is not considered to be the most likely. As indicated in the table, while growth and reserve coverage would be higher than under the baseline in this Scenario (because of the effect of public investment on potential output and because of additional external financing), the debt to GDP ratio would increase by over 14 percent of GDP by 2031.

with no visible long-term growth benefits. Such scenario would lead to modestly higher GDP in the medium-term (less than 1 percent increase relative to the baseline), but the longer terms effects would be small and negative. Crucially, debt levels would be 14 percent of GDP higher than under the baseline (Figure 5).

Figure 5. WAEMU: Unconstrained External Finance, but No Improvements in PFM and Low-Quality Spending

Effects on GDP (deviation from baseline in %)

Effects on Debt/GDP (deviation from baseline in ppts)

- - - SFAs, low quality spending, ext. financing

- - - SFAs, low quality spending, ext. financing

Source: IMF Staff estimates. Note: In the context of the model, "no improvement in PFM" means that SFAs amounts to 1 percent of GDP. "Low-quality spending" means that the additional deficit finances current expenditure.

- *In the case where PFM reforms are implemented (eliminating SFAs) and the additional fiscal deficit is used for high-quality spending, but access to external financing is constrained, the simulations indicate adverse near-term effects on output, but positive effects over the longer term.* This result is due to the effects of additional investment on potential GDP, while the near-term output losses reflect crowding-out of private spending. In the short-run, one would observe a decline in reserve coverage (by less than 1 month of imports) as the risk premium increases (even if the increase is more moderate than in other scenarios) and capital flows decrease, which is attenuated over the medium and long-terms (Figure 6).

Figure 6. WAEMU: Improvements in PFM and High-Quality Spending, but Constrained External Financing

Effects on GDP (deviation from baseline in %)

Official reserves (months of imports, absolute difference)

- - - No SFAs, high quality spending, dom. financing

- - - No SFAs, high quality spending, dom. financing

Source: IMF Staff estimates. Note: In the context of the model, "improvements in PFM" means that SFAs are eliminated. "High-quality spending" means that the additional deficit finances capital expenditure.

33.   In practice, meeting these two conditions simultaneously may prove very challenging in the WAEMU. The ability to finance additional deficits externally and transparently is likely to be limited by the following considerations:

- Prospects for increased external financing are uncertain at the current juncture. Taking a long-term perspective, the ratio of overseas development assistance received to gross national income for the typical WAEMU country has declined by over 7 percentage points since the peak of the mid-1990s and by about 3 percentage points from the average ratio of the 2000s. More recently, some factors are also making access to external financing more difficult. For instance,

Figure 7. WAEMU: Median Net Overseas Development Assistance (percent of GNI)

Source: World Banks' WDI database.

some donors face political pressures to concentrate resources on domestic priorities after the COVID-19 pandemic. Concerns about debt sustainability may also constrain the support provided by international and bilateral institutions. Although Benin, Cote d'Ivoire, and Senegal have successfully tapped into Eurobond markets in 2020 and 2021 at favorable rates, changes in risk appetite by international investors and monetary policy normalization in advanced economies could lead to an increase in spreads in the near future.
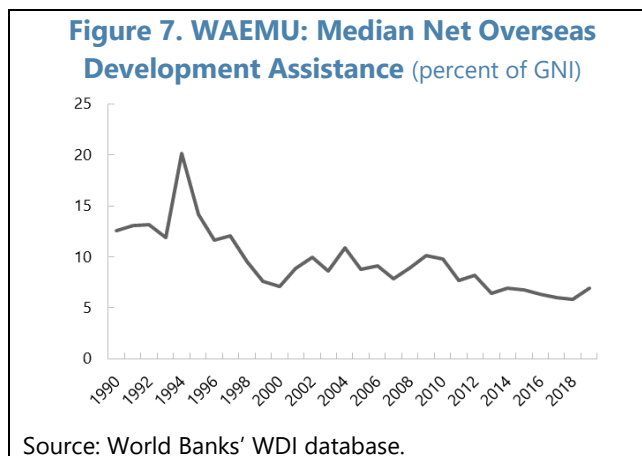
- In addition, large improvements in PFM are likely to take time to materialize. A set of directives issued in 2009 provides guidance to member states on the reform agenda, but in reality, the implementation of these directives has been mixed, both across member states and reform areas (Nguyen-Duong and Selim, 2021). In particular, the adoption of laws to improve internal expenditure controls and transparency of accounts has lagged behind.

Option 2: raising the fiscal deficit ceiling to 4 percent of GDP "below the line"

34.   Under the second policy option, the deficit target would also increase to 4 percent of GDP, but it would be measured "below-the-line". More precisely, the deficit would be measured as the difference between the change in government's financial liabilities and its financial assets (instead of revenue minus expenditure). It would thus include all the operations that account for SFAs in debt dynamics (and are not captured by the above the line deficit concept currently used in the fiscal rules framework). This redefinition of the deficit ceiling would not make much difference in terms of debt dynamics relative to the recent past, if SFAs amount to 1 percent of GDP (the historical average). Nonetheless, it would still differ from current WEO projections, which assume insignificant SFAs over the medium-term.

35.   Some simulations presented above can illustrate the economic implications of this policy option. The outcomes of Scenarios 1 to 3 and Scenario 5 in Table 5 are compatible with the second policy option and the ensuing conclusions would apply, in particular in what regards the importance of external financing and the quality of spending to ensure more favorable outcomes relative to the baseline. Especially, as illustrated in Scenarios 3 and 5, in the case where the financing of the additional deficit would come from domestic sources (rather than external financing), one would observe higher debt (7 percentage points of GDP by the end of the projection period), and

lower reserve coverage relative to the baseline. These scenarios would also imply a looser fiscal stance relative to the baseline embedded in IMF staff's projections, which assume limited SFAs.

36.   Some advantages of moving to a "below the line" definition of deficit targets are not directly captured by the model. Such move might lead to better control and monitoring of governments' borrowing needs and debt dynamics. Moreover, it could enhance the transparency of fiscal rules framework and reduce incentives to move spending off-budget. Nonetheless, such change in definition might also introduce some difficulties in terms of measuring the deficit, particularly as far as the change in financial assets is concerned.

D.   Conclusions

37.   The analysis presented in this paper indicates that the 70 percent of GDP debt ceiling seems adequate, striking the right balance between growth and fiscal sustainability considerations. Raising the regional debt ceiling beyond 70 percent of GDP could create significant fiscal risks and expose countries to possible adverse debt dynamics. But even if the regional debt ceiling is kept at 70 percent of GDP, there is still room for a majority of WAEMU countries to accumulate more debt and the analysis does not preclude the possibility of differentiating individual country ceilings within the aggregated regional ceiling. In addition, the paper presents a range of estimates for the ceiling that vary not only according to the methodology used to compute the debt anchor, but also given uncertainty about the value of key parameters (such as interest rates). Finally, the results are very sensitive to the prospects for revenue mobilization. If countries succeed in making significant progress in mobilizing revenue, this would increase their debt carrying capacity and allow them to sustain higher debt levels.

38.   A higher fiscal deficit ceiling of 4 percent of GDP could undermine domestic and external stability, unless very specific conditions are met. Overall, the simulations suggest that two conditions are essential for an increase in the "above the line" deficit to lead to more favorable outcomes relative to the baseline: (1) unconstrained access to external financing, and (2) significant progress in public financial management to pare down stock-flow adjustments. In practice, meeting these two conditions simultaneously may prove very challenging in the WAEMU, as prospects for increased external financing are uncertain and large improvements in the composition and quality of spending are likely to take time to materialize. If a decision is nonetheless taken to raise the deficit ceiling, there might be some advantages in measuring it "below the line" as this could, in principle, mitigate some of the negative outcomes depicted in the simulations and might foster fiscal transparency.

39.   On balance, the analysis does not support a significant revision in WAEMU fiscal rule ceilings given existing challenges in public financial management and revenue mobilization as well as the still limited size/depth of the regional bond market. Various approaches described in this chapter show that the scope to revisit the debt and deficit ceilings is limited at the moment. No recalibration of fiscal targets would bring unequivocally superior economic outcomes relative to the current situation. The simulations highlight the policy trade-offs and risks associated with higher deficits and debt.

Annex I. Financing Additional Expenditures through Domestic Revenue Mobilization in Lieu of Higher Borrowing

1.   The simulations presented in the main text depict the effects of a permanent increase in expenditure, assuming that taxes remain broadly unchanged. As illustrated in the figures above, the spending increase would be associated with a widening of fiscal deficits either financed by external or domestic resources. Nonetheless, domestic revenue mobilization is still falling short in the WAEMU when compared to other EMDEs and additional efforts in the area are urgently needed. Therefore, an alternative option for funding additional expenditure could be to mobilize more revenues rather than resorting to further debt accumulation.

2.   This annex considers the macroeconomic effects of an increase of 1 percent of GDP in expenditures financed by an increase in consumption taxes (VAT). In this Annex, the fiscal deficit remains unchanged compared to the baseline. Expenditure is financed by higher consumption tax, which is assumed to have no incidence on investment. Two scenarios are considered regarding the additional spending financed by the tax increase: (1) in the first scenario, it is assumed that the increase in expenditures is concentrated in low quality spending, which means that the additional 1 percent of GDP is not spent on items that boost potential output; (2) in the second scenario, it is assumed that half of the additional spending will be devoted to items that increase potential output. A VAT-like tax is an efficient instrument to mobilize domestic revenue in the sense that it is less distortionary than other taxes, nevertheless its effects on growth cannot be analyzed without taking into account the use of the additional revenue.
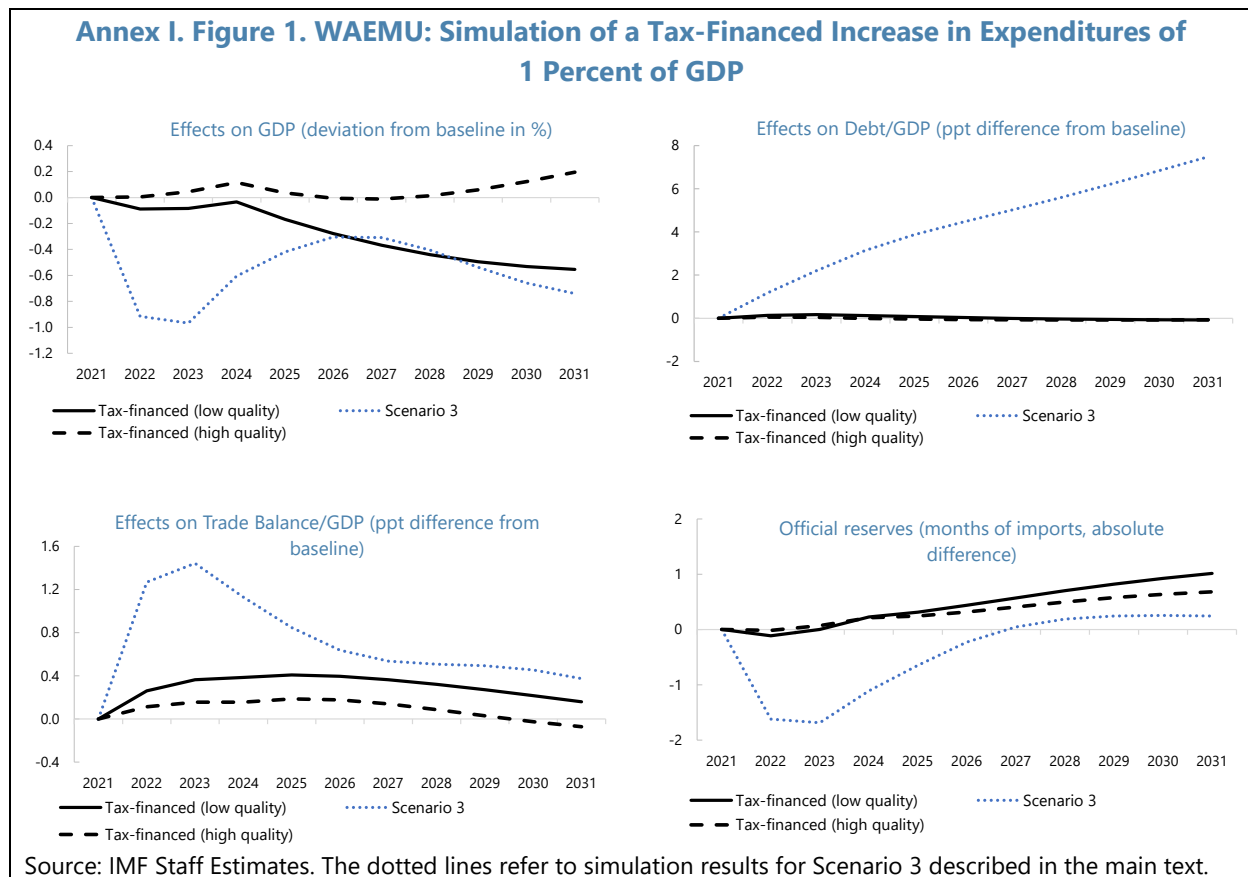
3.   A tax-financed increase in low quality expenditures could have a negative effect on GDP over the long run due to its distortionary effects on economic behavior, but the external position would modestly strengthen (Annex Figure). The dotted lines in the Annex Figure depict the variables for Scenario 3 in the main text for comparison purposes. In the short term the effects of the tax increase on output are muted because additional public expenditures broadly cancel out the reduction in private consumption caused by the tax increase. Nevertheless, the higher consumption tax also reduces labor supply in the long run with negative consequences on GDP.[1] In fact, by 2031, GDP would be 0.6 percent lower than under the baseline. Given that the fiscal deficit does not widen relative to the baseline, the increase in the debt to GDP ratio is negligeable. The trade balance would improve in the medium run because of lower domestic demand. Import compression would cause an increase in the trade balance by 0.4 percentage points of GDP relative to the baseline by 2026, before gradually falling over the long run. In the short run, reserves would not be much affected by the tax increase, but reserve coverage would gradually increase by one month of imports over the long run.

4.   A tax-financed increase in expenditures that boost potential GDP would lead to some gains in output over the long-run as well as a stronger external position relative to the

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[1] Labor supply is affected because the increase in the consumption tax reduces the benefit of earning (and spending) income.

baseline. Economic activity is slightly higher in the short run as private investment is stimulated because, in this Scenario, the additional public expenditure increases potential output (in the model private investment depends on the gap between current and desired capital stock, which is a function of financial conditions and potential output). Subsequently, as public and private capital stock increase, higher real wages compensate partially the negative effect of taxes on labor supply (which was discussed previously). As a result, GDP is somewhat higher in the long run whereas improvements in the trade balance and official reserves are more gradual.

5.   **Overall, even if a tax-financed increase in expenditures may, in some cases, lead to adverse effects relative to the baseline, it dominates the scenarios based on domestic financing of expenditure.** The consumption tax plays the role of "compulsory saving" and therefore reduces the effect of additional public expenditures on the domestic interest rate compared to the scenarios that rely on domestic financing. Moreover, the negative effects of the tax increase on GDP could be reversed if the increase in expenditure is devoted to measures that enhance potential output rather than low-quality spending.

Annex I. Figure 1. WAEMU: Simulation of a Tax-Financed Increase in Expenditures of 1 Percent of GDP

Source: IMF Staff Estimates. The dotted lines refer to simulation results for Scenario 3 described in the main text.

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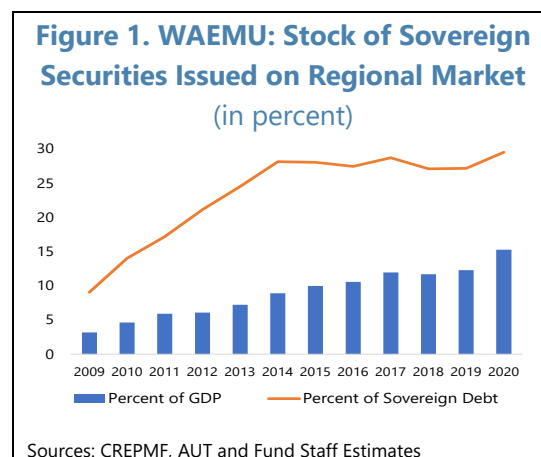
DEVELOPING THE WAEMU'S SOVEREIGN SECURITY MARKET[1]

Notwithstanding strong growth during the last decade the WAEMU's sovereign security market remains underdeveloped and exhibits important gaps in most building blocks needed for such markets to be sufficiently deep, liquid, and efficient. Addressing these gaps will be essential to reduce the dependence of WAEMU governments on external financing and enhance monetary policy transmission. To this end, reform efforts should target improvements in the functioning of the money/interbank market and primary bond market as well as in the financial market infrastructure that most critically hamper the development of the secondary bond market. Incentives to broaden the investor base would also contribute to deepening the WAEMU fixed-income markets.

A. Background

1.   The WAEMU's sovereign security market has grown substantially since the BCEAO ceased to provide direct funding to member governments a decade ago. This market was launched in 1998 but started to take off after the prohibition of new statutory advances by the BCEAO to member-states in 2010. Thus, the nominal stock of government securities (T-Bills and bonds) issued in CFAF on the regional market (through auctions or syndications) grew on average by about 20 percent a year from 2010 to 2020, from less than 5 percent of GDP to 15 percent of GDP. During the same period, the share of sovereign debt issued on the regional security market in total government debt more than doubled from 14 percent to 30 percent.
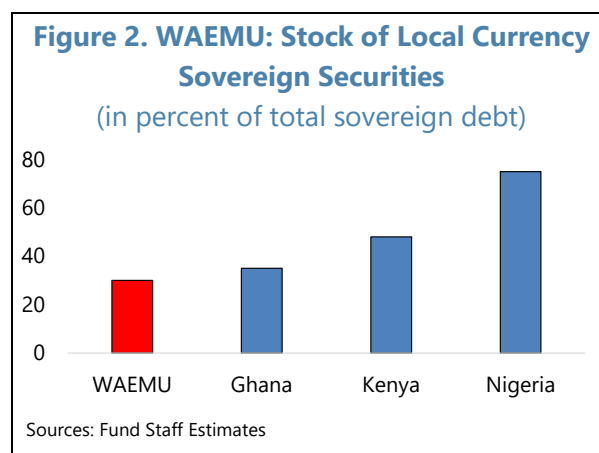
Figure 1. WAEMU: Stock of Sovereign Securities Issued on Regional Market
(in percent)

Sources: CREPMF, AUT and Fund Staff Estimates

2.   The growth of the WAEMU's sovereign security market was accompanied by improvements in issuance policies and the regulatory environment. In 2013, the WAEMU authorities created the Agence UMOA-Titres (AUT), a regional agency, to coordinate regional market issuance, and in the following years strengthened the regulatory framework for primary market operations. In subsequent years, regional authorities implemented a series of measures to promote the predictability and transparency of sovereign securities auctions. The regional financial market regulator (CREPMF) also strengthened rules and procedures for the issuance of sovereign securities through syndication.

3.   At the same time, most of the WAEMU countries strengthened their capacity to prepare and implement a coherent funding strategy. With the assistance of the IMF and the

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World Bank, many of the countries received tailored training for the formulation and implementation of programs of domestic sovereign security issuance, for the assessment of investor demand, and for interactions with investors. Regional training was also offered on characteristics and pricing of sovereign securities, issuance techniques, and steps for developing a yield curve.[2]

4.   Notwithstanding the progress achieved in recent years, the primary sovereign security market in the WAEMU remains relatively under-developed by international standards. The share of sovereign debt issued on the domestic fixed income market[3] in the WAEMU is well below other Sub-Saharan countries such as Ghana, Kenya, and Nigeria where it stood at 35, 48, and 75 percent respectively at end-2020. (Figure 2) [4]

Figure 2. WAEMU: Stock of Local Currency Sovereign Securities
(in percent of total sovereign debt)

Sources: Fund Staff Estimates

5.   There is still significant scope for further developing the WAEMU's local currency security market. The WAEMU region satisfies several conditions that are generally seen as conducive to local currency bond market (LCBM) development. One of them is the size of the potential market allowed by the economic and monetary integration of eight countries, which creates economies of scale.[5] In addition, the strong growth and macroeconomic stability as well as the strengthening of bank soundness achieved during 2012-2019 allowed the WAEMU region to enter the COVID crisis from a position of strength; and prospects for recovery from this crisis are favorable, albeit with some downside risks. The projected convergence of fiscal deficits back to the regional norm of 3 percent of GDP by 2024 should sustain the demand of WAEMU sovereigns for funding on the regional fixed income market while preserving fiscal and external viability. Finally, inflation should remain well-contained given the peg of the CFA Franc to the Euro.

6.   This paper applies the IMF/World Bank diagnostic LCBM framework to identify reforms needed to lift the main constraints still impeding the development of the WAEMU's sovereign security market. This systematic and comprehensive framework is articulated in a recent Guidance Note which expands on the traditional building blocks (pillars) of LCBM development and identifies indicators that can be used to systematically assess the performance of each LCBM

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[2] For an assessment of technical assistance provided by the IMF from 2017 to 2020, see Annex VII of IMF Staff Report on Common Policies for WAEMU Member Countries, January 2021.

[3] Sovereign debt not issued on the regional market includes domestic loans and external issuances.

[4] At end-2019, the share of local currency marketable sovereign debt was 47 percent for emerging economies and 95 percent for advance economies. See IMF and World Bank, 2021 "Guidance Note for Developing Government Local Currency Bond Markets", available through the following link: https://www.imf.org/en/Publications/analytical-notes/Issues/2021/03/17/Guidance-Note-For-Developing-Government-Local-Currency-Bond-Markets-50256.

[5] The WAEMU's 2020 GDP is about double that of Ghana and 30 percent larger than that of Kenya.

building block.[6] Taking also into account the synergies between the building blocks, such an approach helps to identify the areas where reforms and policy measures are most needed.

B.   Assessment of the Building Blocks for Sovereign Bond Market Development

7.   The IMF/World Bank LCBM framework identifies six building blocks that can help analyze the stage of development of the WAEMU's sovereign security market. These building blocks are intuitively designed to provide focus on key reforms for the efficient functioning of LCBMs:

- The *money/interbank market*. It facilitates the implementation of monetary policy and strengthens monetary policy transmission, but also provides a foundation for the maturity extension of sovereign financing. The money market is a thus a building block of the sovereign debt market and is important to assess its level of development.

- The *primary sovereign security market*. Through this market, sovereign debt managers implement their debt management strategy and establish the relationship with market participants. Thus, primary market policies have a fundamental role in promoting the development of the domestic sovereign security market.

- The *secondary market*. It should provide a cost-efficient and secure platform to trade sovereign securities in a fair and transparent way. The secondary market provides liquidity for government securities that leads to term transformation, allowing investors to hold longer maturities than that of their liabilities on the assumption that liquidity will be available in the secondary market. The secondary market also provides a pricing reference for the sovereign—contributing to price discovery on the sovereign's new borrowing costs and for non-sovereign borrowers.

- The *investor base*. A deep and diversified investor base ensures demand for government securities, strengthening the resilience of the market in times of market stress. The development of a diverse investor base comprising agents with different investment horizons and risk-return preferences, particularly institutional investors, allows governments to spread risk in their debt portfolios and helps to extend the yield curve.

- The *financial market infrastructure (FMI)*. This building block should facilitate the smooth flow and settlement of transactions in the money market and the primary and secondary markets, strengthen investor confidence, and stimulate the pace of market expansion. The state of development and functioning of the custodial and settlement infrastructure is a major determinant of systemic risk.

- The *legal and regulatory framework*. It affects the structure, functioning, and development of the sovereign security market. Legislation and other legal instruments provide for the ability of governments to borrow. At the level of intermediaries and investors, rules and regulations shape

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[6] See IMF and World Bank, 2021 "Guidance Note for Developing Government Local Currency Bond Markets" (link above).

the organization of the primary and secondary markets in government securities and influence the roles of different types of market participants.

**8.   Each building block is decomposed into a series of outcome and/or policy indicators.** "Outcome" indicators are used to evaluate the state of the market for each relevant building block; and "policy" indicators are used to assess the policy and regulatory-associated practices employed by the authorities (both *de jure* and *de facto)*. Four building blocks (money market, primary market, secondary market, and investor base) have outcome indicators and policy indicators. The other two blocks (FMI and legal and regulatory framework) have only policy indicators.

9.   Each indicator is assessed through a scale of four stages of market development. Development stages are ranked 1 to 4 corresponding respectively to nascent (1), developing (2), emerging (3) and mature (4). Each indicator's assessment is derived from averaging answers to qualitative or quantitative questions relevant for that aspect of market development.[7] Regarding the WAEMU's sovereign security market, answers to such questions reflected consultations with relevant regional institutions and Fund staff, including WAEMU country teams for issues of national relevance. Some judgment was made when answers to questions related to national matters differed among member countries, with a view to retaining the most meaningful one for the entire WAEMU region. Consolidating the stages of the indicators for each building block generates also the stage of development for that particular building block – which also ranges from 1 to 4. Finally, individual building blocks' rankings are combined into an overall assessment of the level of development of the sovereign security market as a whole.

10.   Overall, the WAEMU's sovereign security market is assessed as being a stage 2 of development. For most building blocks, some indicators suggest a good functioning of certain aspects of that particular building block, while other indicators point to severe weaknesses. Deficiencies are more prevalent for the primary market and investor base building blocks, but they also hinder the development of the money market, secondary market, and market infrastructure building blocks.

Figure 3. WAEMU: Sovereign Bond Market Stages of Building Block Development

Sources: Fund Staff Estimates

This is illustrated through the colors assigned to each building block in Figure 3 and to each of the 40 underlying indicators in Table 1 below. The main considerations underlying this assessment are summarized below for each building block.
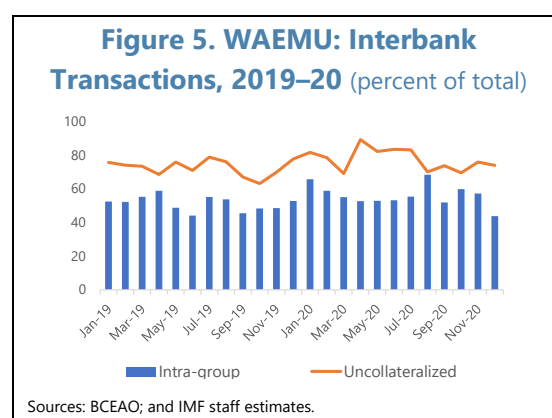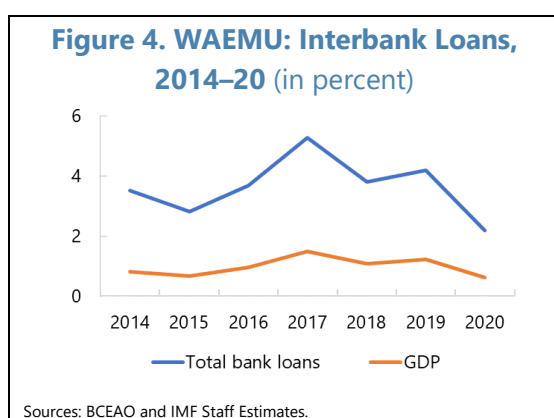
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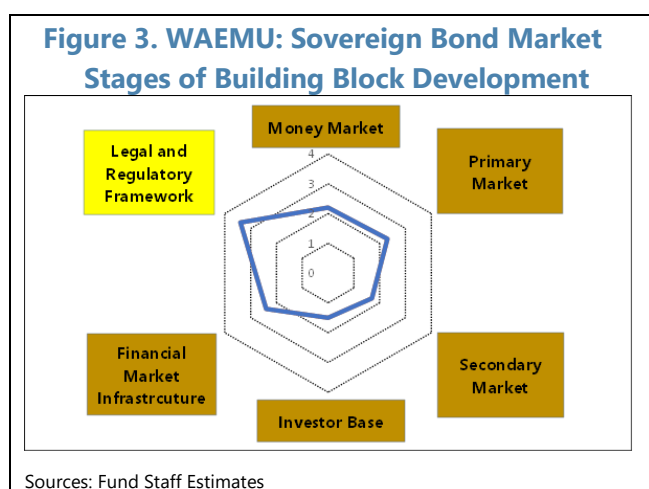
[7] The framework includes about 200 questions spelled out in the aforementioned 2021 LCBM Guidance Note.

Table 1. WAEMU: Stages of Development of Building Blocks of the Sovereign Security Market

Money Market	Primary Market	Secondary Market	Investor Base	Financial Market Infrastructure	Legal and Regulatory Framework
Developing (2.2)	Developing (2.3)	Developing (1.7)	Developing (1.5)	Developing (2.4)	Emerging (3.4)
(1) Well-functioning short-term securities and repo markets	(1) Marketable domestic debt as a share of sovereign debt	(1) Market liquidity and depth	(1) Market participants	(1) FMI technology platforms (FMI systems framework)	(1) Borrowing authority
(2) Monetary policy operating framework	(2) Stability of domestic market financing	(2) Pre-trade transparency	(2) Investor relations management	(2) Efficient and low-risk custody and settlement	(2) Market regulation and enforcement
(3) Monetary policy operations	(3) Maturity of local currency government securities	(3) Post-trade transparency	(3) Domestic institutional investors	(3) Soundness and operating environement of FMI	(3) Investor protection
(4) Transparency	(4) Length of the yield curve	(4) Market-making duties	(4) Central bank monetary financing	(4) Repo markets	(4) Collective Investment Schemes (CIS)
(5) Legal framework for repurchase transactions	(5) Market-based pricing	(5) Market-making privileges	(5) Foreign investors	(5) Transparency (data and information)	(5) Tax certainty for key primary and secondary market transactions across key investor classes
	(6) Market-based placement mechanisms	(6) Trading environment	(6) Buy-and-hold investors		
	(7) Predictability and transparency of issuance				
	(8) Government cashflow forecasts				
	(9) Transparency of auction results				
	(10) Transparency of communication between the authorities and market				
	(11) Market fragmentation				
	(12) Benchmark bonds				
	(13) Cash and debt management				

Indicators

"Outcome" Indicator	"Policy" Indicator

Stages of Market Development

Stage 1	Nascent
Stage 2	Developing
Stage 3	Emerging
Stage 4	Advanced

11. The *Money Market* building block in the WAEMU is assessed to be at a developing stage (2.2), mostly due to a shallow and insufficiently transparent interbank market:

- **The BCEAO's monetary policy operating framework is broadly sound on a de jure basis and uses interest rates as an operational target**. However, in practice, the interbank rate has not acted systematically as a credible "operational target."[8]

- **The WAEMU's interbank market remains shallow and lacks proper reference prices for up to one year.** The volume of interbank transactions remains very small, with interbank loans equivalent to 2 percent of total bank loans and less than 1 percent of GDP at end 2020 (Figure 4). In addition, transactions are often limited to non-collateralized intra-group institutions (Figure 5). Finally, many banks rely on the BCEAO's refinancing windows and do not participate in the interbank market, keeping reserves at the central bank to meet their liquidity needs.

Figure 4. WAEMU: Interbank Loans, 2014–20 (in percent)

Sources: BCEAO and IMF Staff Estimates.

Figure 5. WAEMU: Interbank Transactions, 2019–20 (percent of total)

Sources: BCEAO; and IMF staff estimates.

- **The WAEMU's interbank market also lacks transparency**. Proper pre and post trading transparency are both lacking, with market participants having incomplete KYC (Know Your Counterparty) information available on other counterparties and insufficient data on quotes for T-bills or repos. No short-term rate is published daily, and banks seem to rely more on the average auction rate to assess financial conditions.

- **The legal framework for the repo interbank market is broadly in place, but improvements are needed**. Repos among banks are supported by the legal framework which allows for the full transfer of securities used as collateral. However, a shallow secondary market and a fragmented sovereign security market (see below) constrain the collateralization of repo transactions.

12. The *Primary Security Market* building block in the WAEMU is assessed as being at a developing stage (2.3), largely due to its fragmentation. [9]
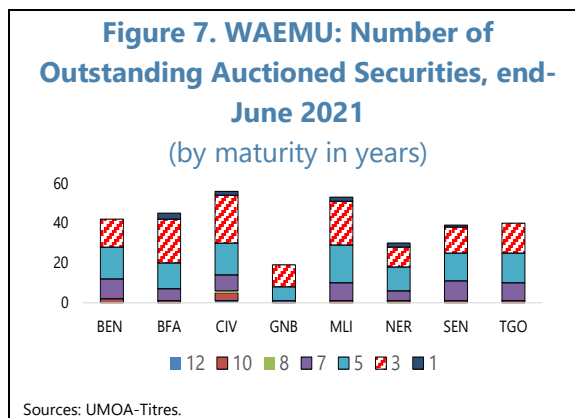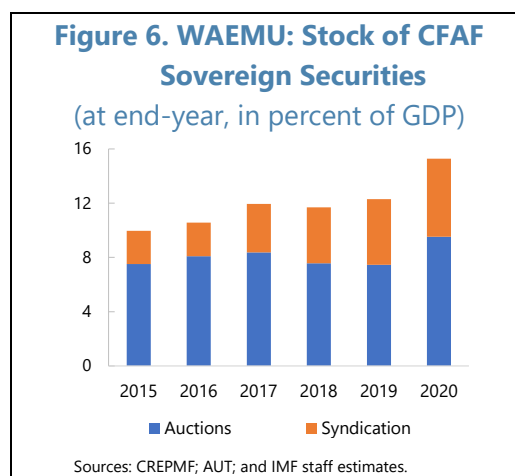
- **Sovereign funding raised on the regional security market, as a share of total debt, remains low by international standards**. As noted earlier, despite its strong growth in the last decade,

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[8] See Abidi, N. and Amidzic, G. 2021, "Modernizing the Monetary Policy Framework and its Transmission", in West African Economic and Monetary Union Selected Issues Paper, IMF Country Report 21/50.

[9] Focusing only on the auction segment of the primary market would have shifted the assessment to an "emerging" (3) instead of a "developing" (2) stage for this pillar.

the share of sovereign debt raised on the security market remains much lower in the WAEMU than in Sub-Saharan frontier market countries such as Ghana, Kenya and Nigeria. Also, the maximum tenure of sovereign bonds issued on the WAEMU's market is 12 years,[10] whereas it reaches 15 years in Ghana, Kenya and Tanzania and 30 years in Nigeria.[11]

- **The segmentation by mode of issuance of the primary sovereign security market critically constrains its development.** WAEMU sovereign securities can be issued either through auctions or syndications (Figure 6). T-Bills, of maturity of up to 24-months, are issued only through auctions, while bonds, including Sukuks consistent with Islamic finance principles, may be issued by both auctions and syndications. Auctions are organized by the Agence UMOA Titres (AUT) with securities cleared and deposited at the BCEAO. By contrast, syndicated issues are facilitated and supervised by the financial market regulator (CREPMF), with securities listed on the regional stock exchange (BRVM) and cleared and deposited at the central depository (*Dépositaire central/Banque de Règlements* or DC/BR), which is the central securities depositor associated with the BRVM. Differences in product characteristics, including the fact that auctioned instruments increasingly require a bullet repayment while syndicated ones are amortizing, as well as different trading platforms and regulatory entity, reinforce the lack of fungibility between securities issued on these two distinct market segments.

Figure 6. WAEMU: Stock of CFAF Sovereign Securities
(at end-year, in percent of GDP)

Sources: CREPMF; AUT; and IMF staff estimates.

- **In addition, the ability to create benchmark securities is hampered by a series of factors.** Creating benchmark securities requires re-opening instruments already issued, with a view to increasing the volume of funding raised by the same instrument. However, WAEMU sovereigns tend to adjust the coupon of new bonds in response to market movements, hindering the ability to reopen existing instruments. Moreover, refinancing risk concerns, partly due to cash management weaknesses, may discourage sovereigns from issuing large amounts of individual instruments. Although some benchmark instruments have been issued in the past, the common practice for WAEMU sovereigns remains to issue new instruments of

Figure 7. WAEMU: Number of Outstanding Auctioned Securities, end-June 2021
(by maturity in years)

Sources: UMOA-Titres.

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[10] Côte d'Ivoire issued 12-year bonds (through syndications in 2016 and 2017 and through an auction in 2021) and Togo auctioned a 11-year bond in 2017. Apart from these specific issuances, all other WAEMU CFAF bonds have had maximum tenure of 10-years, except Guinea Bissau which has issued bonds with a maximum 5-year maturity.

[11] See IMF and World Bank. 2020. "Staff Note for the G20 International Financial Architecture Working Group – Recent Developments on Local Currency Bond Markets in Emerging Economies".

same maturities at short intervals.[12] This generates a large number of outstanding instruments of the same maturity that cannot function as reference for that point of the yield curve. (Figure 7) Such a policy of issuing new instruments - with different ISIN codes –makes it more difficult for primary dealers to trade in the secondary market.

- **WAEMU sovereigns' cash management practices are not sufficiently developed**. Some countries in the region have not yet established effective cash management policies to address roll-over risks, such as building up a cash buffer and engaging in regular liability management operations. This makes it more difficult for these WAEMU sovereigns to adhere to their security issuance plans.

- **On the positive side, sovereign security auction practices are relatively efficient and transparent**. In collaboration with Agence UMOA-Titres (AUT), WAEMU sovereigns publish yearly and quarterly security auction plans although often with relatively limited lead time. Sovereign security auctions have been generally oversubscribed in recent years, though this may not happen in the event where funding requirements increased substantially and/or monetary policy tightened significantly.[13] In line with international best practices, shortly after auctions takes place, results are published along with information on the bid and accepted amounts, as well as the cut-off yield.
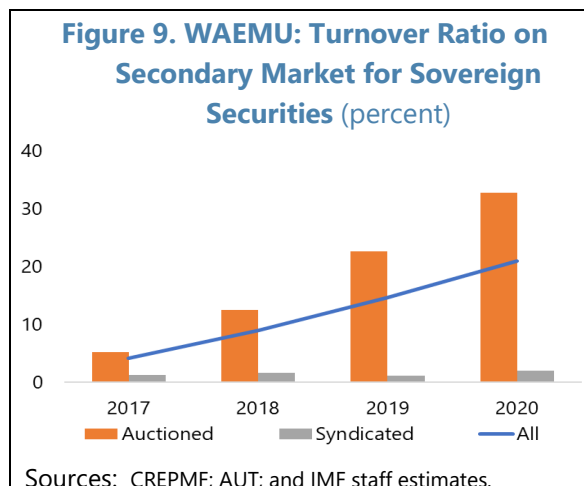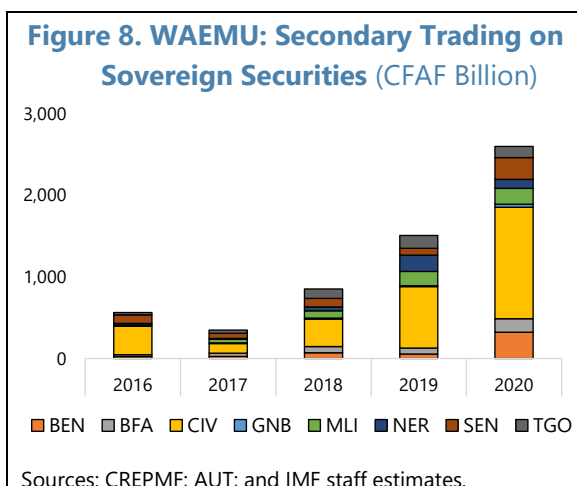
13.   The *Secondary Security Market* building block is assessed at a relatively low (1.7) level of development, particularly because of its shallowness and lack of diversification.

- **The secondary market for sovereign securities is relatively shallow, lacking depth and liquidity**. The bulk of secondary trading occurs between national subsidiaries of banking groups operating in several WAEMU countries. They mostly involve auctioned securities, predominantly from Côte d'Ivoire, which are more liquid than syndicated ones. (Figure 8) [14] The turnover ratio between the annual volume of secondary market transactions and the stock of auctioned sovereign securities outstanding at the end of the previous year increased from 4.1 percent in 2017 to 20.9 percent in 2020. This rising trend was in fact driven by the more liquid auctioned securities, whose turnover ratio reached 32.7 per cent in 2020 (Figure 9). This later ratio compares favorably with that of 20.9 percent for the CEMAC and but is much less than the average of 143.4 percent for emerging Asian economies such as Malaysia, the Philippines Thailand, and Vietnam). The extremely low turnover ratio of syndicated securities suggests that the framework used around this issuance method has not been sufficient to support market development.

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[12] For instance, Côte d'Ivoire issued two different 5-year bonds in September and December 2020 while Senegal issued two different 7-year bonds within the same month of February 2021.

[13] Subscription rates fell significantly short of 100 percent in 2017 following the tightening of monetary policy at end-2016 (partly achieved through the introduction of a quantitative ceiling on recourse of banks to BCEAO refinancing).

[14] In 2019-20, syndicated bonds accounted for 3.4 percent of transactions on the WAEMU's secondary market for sovereign securities. During the same period, Côte d'Ivoire's share in the volume of sovereign securities traded on the WAEMU's regional market averaged 51.2 percent, while its share in the stock outstanding of such securities was 35.2 percent (slightly less than its contribution of 38.2 percent to regional GDP).

Figure 8. WAEMU: Secondary Trading on Sovereign Securities (CFAF Billion)

Sources: CREPMF; AUT; and IMF staff estimates.

Figure 9. WAEMU: Turnover Ratio on Secondary Market for Sovereign Securities (percent)

Sources: CREPMF; AUT; and IMF staff estimates.

- **Public information on secondary market pricing is insufficient**. Trading for auctioned securities is done over-the-counter (OTC) and no platform to disseminate the prices is currently in place. Market-makers do not quote firm prices for benchmark securities on a regular basis and they do not even provide indicative prices. There is a platform for trading syndicated securities, but liquidity is even lower, perhaps to some extent driven by the amortizing structure of the bonds (Figure 9). UMOA-Titres publishes a yield curve weekly but only based on data from the primary market.

- **Sovereign security dealers fall short of being true market makers.** A system of sovereign security dealers (*Spécialistes en Valeurs du Trésor* or SVT) was introduced in 2013 and became operational 2016, with a view to improving secondary market liquidity. Such dealers are licensed to act as privileged partners of one or more WAEMU member states and have obligations to act as market makers on both the primary and secondary markets. In return they can, among other benefits, have access to non-competitive offers and request a delayed payment in auctions. In practice however, such benefits fall short of providing dealers with sufficient incentives to fulfill their expected role of market makers, which basically implies quoting and trading bonds in the secondary market, as well as bidding in the primary market.[15] There is also room to improve the mechanisms in which the non-competitive auctions operate, for instance, by providing a longer period in which market-makers can buy bond on a non-competitive basis. In addition, a more efficient policy to build benchmark bonds and provide reference points along the yield curve should facilitate the trading activity of SVTs (as the market would focus on the trading of a smaller number of instruments) and help reduce the above-mentioned imbalance between their obligations and benefits. Establishing a securities lending facility and providing liquidity support for these dealers would also be a welcome policy.

- **The trading environment is deficient and needs to be further developed**. There is currently no electronic inter-dealer trading platform that could facilitate trading and promote price transparency. Short-selling is not allowed, which might restrict market-making activity. The

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[15] Results from a survey conducted by the 2021 Financial Sector Assessment Program (FSAP) on systemic liquidity.

segmentation of the market in two different platforms (depending on whether the instrument was issued by syndication or auction) is a further deterrent to a more active secondary market.

- **Other factors contribute to the low level of secondary market liquidity**. First, a shallow and non-diversified investor base (covered in next section) structurally reduces the ability of dealers to transfer securities to final investors. Second, deficiencies in the primary market, such as the fragmentation of the market and the sub-optimal policy of benchmark securities issuance (as mentioned above) makes quoting and trading securities more challenging.

14.   The *Investor Base* building block is assessed at a low (1.5) level of development, in particular because of its narrowness and lack of diversity.

- **The WAEMU investor base is shallow and dominated by the banking sector.** Banks operating within WAEMU constitute about 85 percent of the investor base for government securities issued domestically (Figure 10). They account for around 90 percent of domestic issuances through auctions and 75 percent of the syndication placements. In the absence of a more liquid secondary market, banks also have a buy-and-hold investment strategy. The remaining players are pension funds (usually from the public sector), insurance companies and investment funds. The participation of international investors from outside the WAEMU remains negligible in the regional security market. It is estimated at less than 1 percent for auctioned securities, while it exceeds 15 percent in comparator SSA countries such as Ghana, Kenya or Nigeria. On a more positive note, central bank direct sovereign financing, including through the BCEAO's participation in the primary sovereign security market is prohibited.

Figure 10. WAEMU: Banks' Holdings of Sovereign Securities (percent)

Sources: BCEAO; and IMF staff estimates.

- **Investor relations practices could be improved**. A proper communication with market players is an essential part of the issuance activity. However, in the WAEMU region, most countries do not have an investor relations unit, and this task is mostly delegated to UMOA-Titres, which is short-staffed. In addition, authorities do not regularly engage in two-way communication with market participants, do not conduct regular fora to discuss their debt strategy or market conditions. A dedicated webpage on debt management issues is also missing from the ministries of finance websites.
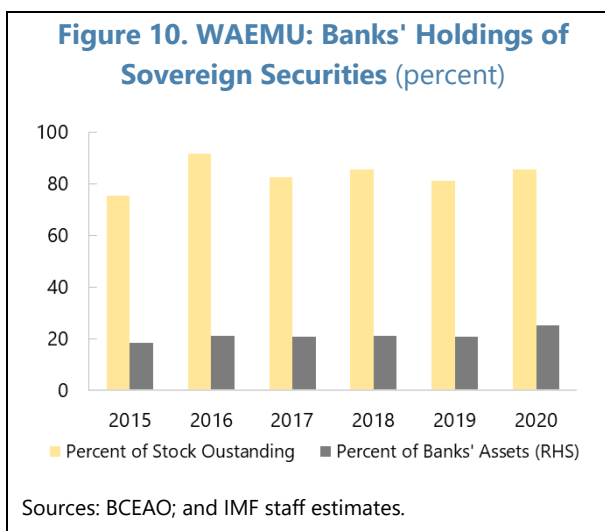
15.   The *Financial Market Infrastructure* building block is assessed at a relatively low (2.3) level of development, notably because of deficiencies in the interbank repo market.

- **The technology platforms are broadly in place**. The auctions are held on an electronic platform and seem to work smoothly. For the instruments issued by each mechanism (auction or

syndication), there is one single custodian, which prevents further fragmentation of the market. The BCEAO operates a modern RTGS (Real Time Gross Settlement) system.[16]

- **Clearing and settlement risks are contained**. All securities are dematerialized, and such dematerialization is supported by the legal framework. The transactions are settled through the RTGS system, minimizing risks. Moreover, the governance for the central security depository is broadly in place, as the legal framework defines who can own and operate a Central Securities Depository (CSD) as well as its roles and functions.

- **On the other hand, a few issues related to liquidity, transparency, and fragmentation warrant progress.** First, the market infrastructure should provide better access to liquidity to participants, for instance by supporting same-day settlements of transactions and allowing the use of intraday repos. Secondly, the current infrastructure does not seem to facilitate the provision of information on transactions volumes and prices, harming market transparency. Third, the fragmentation of the issuance system generates a segmentation of the market infrastructure, increasing costs unnecessarily and reducing market efficiency.

16.   The *Legal and Regulatory Framework* is assessed as broadly supportive of other building blocks and has the most advanced stage of development (3.4) in the WAEMU.

- **The legal framework for the primary security market is sound and adherent to best practices**. Such framework provides a clear authority to borrow to individual countries' ministries of finance and sets clear roles and responsibilities to debt management offices. It also allows these entities to conduct liability management operations and, for all WAEMU countries except Guinea Bissau, requires the publication of a debt management strategy.

- **Secondary market activities are also supported by the legal framework**. The regulatory framework prohibits unfair trading practices and the regulatory authority is perceived as having the capacity to monitor secondary market activities, as well as to ensure proper market conduct by the participants. In addition, depositary intermediaries are subject to rules to safeguard investor ownership rights, with the regulatory authority having the capacity to oversee the compliance of the relevant rules. However, there is a need for greater clarity on which institution has supervisory authority on secondary trading of auctioned securities.

- **The participation of institutional players such as investment funds is broadly supported by the legal framework**. Standards for eligibility, governance, and operationalization of investment funds are in place. Moreover, sufficient disclosure to ensure investor protection is provided.

- **On the other hand, the rules for taxation of government bonds lack neutrality and are distortionary**. Indeed, they discriminate among investors based on their country of residency within the WAEMU. In addition, the regulatory environment seems to miss the requirement for periodic mark-to-market valuation of securities holdings.

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[16] RTGS is a fund transfer system that allows money and/or securities to be transferred instantaneously, thus reducing the risks to the participants.

C.   Conclusions and Policy Recommendations

17.   Notwithstanding its significant growth in the past decade, the WAEMU's sovereign security market remains at a developing stage. This is confirmed by a systematic assessment of an array of indicators of functionality for the six building blocks identified by the LCBM development framework recently elaborated by the IMF and the World Bank. Such an approach facilitates the identification and sequencing of actions most needed to help the WAEMU's sovereign security market move closer to an emerging stage of development, which will be essential to reduce the dependence of WAEMU governments on external financing, improve WAEMU countries' economic resilience and enhance monetary policy transmission.

18.   In the WAEMU, reform efforts could most usefully focus on measures aimed at increasing the depth and liquidity of the secondary sovereign security market. Such measures would need to be accompanied by mutually reinforcing ones aimed at addressing deficiencies in other LCBM building blocks that most critically hinder the development of the secondary market. Areas that deserve a more attention in each one of the six building blocks are as follows:

- **Money Market:**

  o   Promote transparency of the interbank repo market by ensuring the daily availability of information on trading and promoting reference prices/rates that can be used as guidance for banks' loans.

- **Primary bond market**:

  o   Reduce the fragmentation of the market, by acting on two important fronts: (1) eliminate the segmentation derived from the two issuance mechanisms (for auctions and syndications), which would require a generalization of a bullet structure for all sovereign securities, as well as the unification of the trading infrastructure and regulatory environment; (2) enhance the policy of issuance of benchmark bonds, by using more widely the reopening of the same instrument, facilitating their use by market-makers and fostering the formation of better reference prices. This would allow a more effective policy of reopening the instruments issued in previous auctions.

  o   Improve sovereigns' cash management practices. This would, among other things, require countries building up cash buffers. To provide the proper incentives for such practices, sovereign resources deposited at BCEAO should be remunerated at market rates, and at the same time ring-fenced for debt management purposes.

- **Secondary bond market**:

  o   Improve transparency and price formation through the development of an electronic platform for auctioned securities.

  o   Increase the incentives for the SVT to animate the secondary market, including by producing continuous price quotations. To this end, SVT could be provided access to facilities such as securities lending and credit lines. Also, non-competitive auctions could be structured in a way that incentivizes the fulfillment of SVT's obligations.

- **Investor Base:**
  - Stimulate the creation of institutional investors and private pension funds.
  - Enhance investor relations programs at the national level to improve two-way communications with investors.

- **Market Infrastructure**
  - Allow the use of intra-day repos and same-day settlement to enhance access to short-term liquidity.
  - Unify the central depository system for sovereign securities.

- **Legal and Regulatory Frameworks**:
  - Remove distortionary tax treatments on fixed income securities, in particular the exemptions granted to investors purchasing securities from the sovereign of their specific WAEMU country of residence.
  - Require investment funds to mark-to-market their asset portfolio.

19. **Reform measures may take more or less time to be fully implemented depending on the constraints specific to each indicator and building block**. For instance, measures involving a single regional institution, such as the BCEAO, should potentially take less time to implement. On the other hand, other measures will need to involve coordination among different agencies and across several countries with varying degrees of capacity development, therefore taking more time to be implemented. Table 2 below illustrates a possible sequencing of proposed policy reforms.

Table 2. WAEMU: Proposed Sequencing of Reforms for the WAEMU's Sovereign Security Market

Building Blocks and Proposed Policy Actions	Time Horizon (in years)		
	≤1 year	]1 - 3]	> 3 years
Money Market			
Promote transparency of the interbank repo market	▓		
Primary Market			
Eliminate the segmentation derived from the two issuance mechanisms		▓	
Enhance the policy of issuance of benchmark bonds	▓		
Improve sovereigns' cash management practices		▓	
Secondary Market			
Develop an electronic platform for auctioned securities	▓		
Increase the incentives for the SVT to animate the secondary market	▓		
Investor Base			
Stimulate the creation of institutional investors and private pension funds			▓
Enhance investor relations programs at the national level	▓		
Market Infrastructure			
Ensure market participants (SVT) obtain liquidity in a quick and low-risk way		▓	
Legal and regulatory Framework			
Remove distortionary tax treatments on fixed income securities		▓	
Require investment funds to mark-to-market their asset portfolio		▓	

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