West African Economic and Monetary Union Selected Issues

WEST AFRICAN ECONOMIC AND MONETARY UNION

SELECTED ISSUES

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This Selected Issues paper on the West African Economic and Monetary Union (WAEMU) was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on March 3, 2016.

WEST AFRICAN ECONOMIC AND MONETARY UNION

SELECTED ISSUES

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Approved By
The African Department

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CONTENTS

PUBLIC INVESTMENT EFFICIENCY IN WAEMU: AN EMPIRICAL ASSESSEMENT[1]

This paper presents stylized facts on the quantitative and qualitative infrastructure gap in the WAEMU, estimates the efficiency of public investment and recommends how to improve it. It finds that, despite high level of public investment during the past decade, infrastructure quantity and quality remain relatively low in WAEMU. The WAEMU's public investment efficiency compares unfavorably with benchmark countries, including other sub-Saharan African countries. The results of panel estimation suggest that strong institutions can play a crucial role in fostering the efficiency of public investment. WAEMU countries need to improve certain public investment management (PIM) institutions that could reduce the efficiency gap.

A. Introduction

1.   WAEMU countries are projected to increase public investment volumes significantly to close the region's infrastructure gap. This gap is relatively large and has been widely identified as a growth bottleneck (Figure 1). The WAEMU's infrastructure needs are substantial (Dominguez-Torres and Foster 2011; IMF 2013a; IMF 2013b; IMF 2013c). In particular, WAEMU countries are lagging behind sub-Saharan African benchmark countries in electricity supply, paved road density and telecommunication infrastructure. Insufficient or inefficient infrastructure reduces the return to trade and economic activity and constrains growth prospects (Commission for Africa 2005; Foster and Briceño-Garmendia 2009). To close this gap, many WAEMU countries are envisioning to significantly boosting public capital expenditure in the medium-term. On average, staff projects that public capital expenditures will increase to around 9.5 percent of GDP in 2015 to 2019, up from an average below 8 percent in 2011–14.

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[1] Prepared by Karim Barhoumi, Fan Yang, Monique Newiak, and Ha Vu

Figure 1. WAEMU: Selected Measures of Infrastructure Quantity

Electricity Generation

(Kwh per capita)

Selected Quantitative Indicators of Infrastructure

(normalized indices)
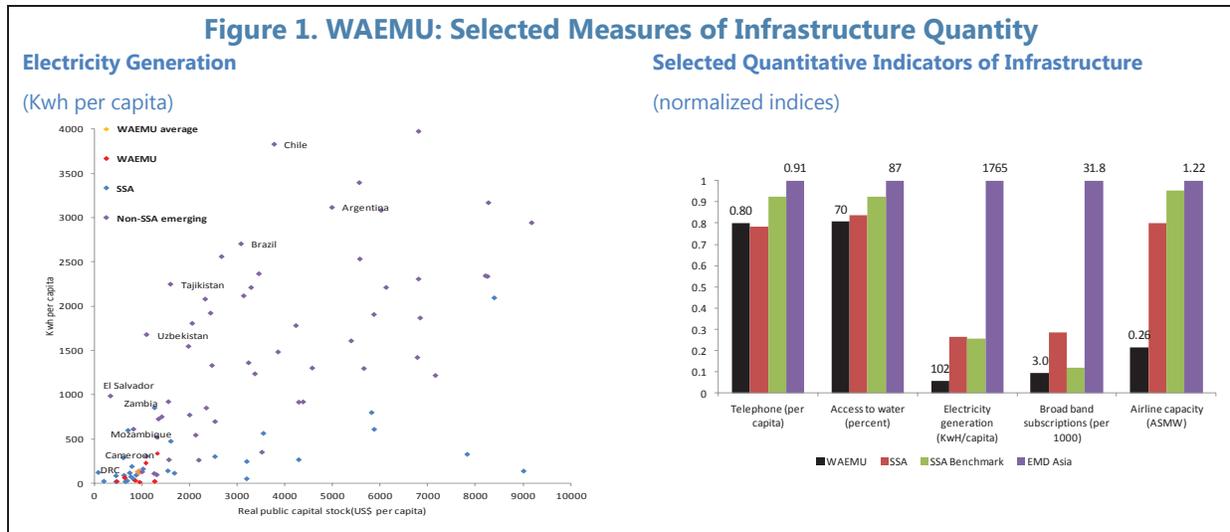
2. **In addition to the infrastructure gap, however, the region's infrastructure is also perceived as being of relatively low quality, and investment efficiency appears low** (**Figure 2**). The most recent World Economic Forum's (WEF) Global Competitiveness Indicators ranks WAEMU countries 110 out of 148 countries, behind the sub-Saharan African average and sub-Saharan African benchmark countries. The quality of electricity supply, railroads and roads scored below sub-Saharan benchmark countries' average as well. At a comparable level of real public capital stock, WAEMU's overall infrastructure quality is perceived as lower than that of regional peers.

Figure 2. WAEMU: Infrastructure Quality

Qualitative Infrastructure Competitiveness Rankings

(Average 2013-2015)

Qualitative Ratings of Infrastructure, 2013

(Global Competitiveness Index, Average of Second Pillar Indices)
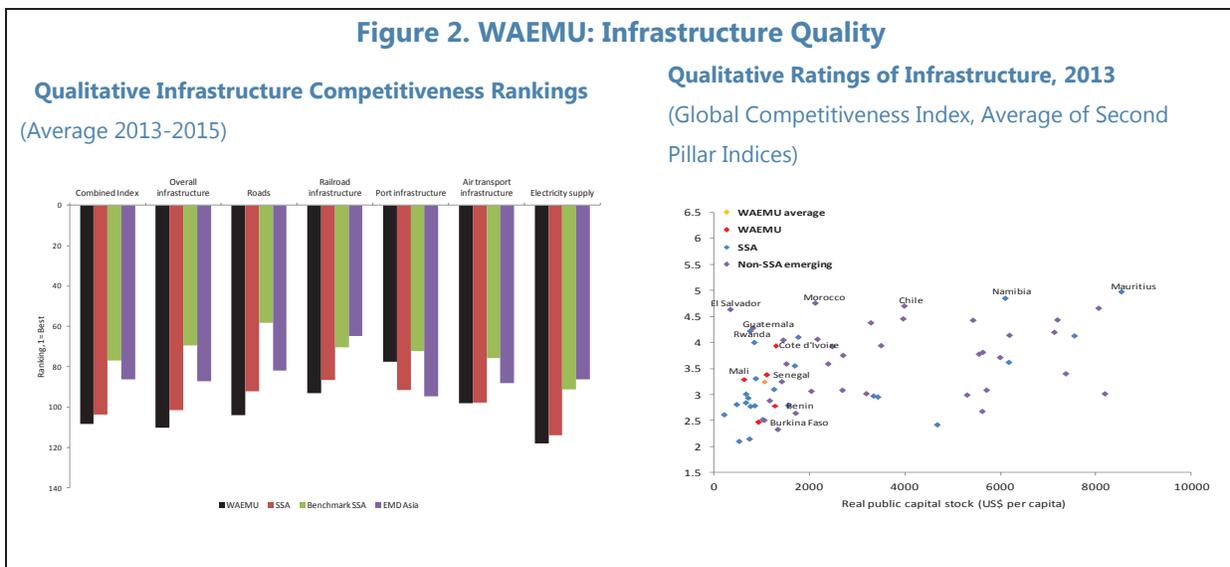
3. **This paper empirically assesses public investment efficiency in WAEMU, and highlights its main determinants.** While the literature on public investment efficiency for advanced economies is vast, such studies have been limited for sub-Saharan African countries and in particular for the WAEMU. This note therefore first assesses the infrastructure gap in WAEMU based on the efficiency

frontier analysis. It then identifies the determinants of public investment efficiency through panel regressions. A concluding section presents the main findings and the policy implications.

4.   **Caveats.** Due to data limitations, this note does not analyze public and private sector infrastructure separately. Likewise, the note does not derive the efficiency of investment spending by type of infrastructure due to insufficient data granularity.

B. Assessing Public Investment Efficiency in the WAEMU

5.   **This section provides a measure for public investment efficiency in the WAEMU.** This measure refers to the relative efficiency in translating monetary inputs into infrastructure outputs (efficiency frontier analysis).

Efficiency Frontier Analysis

6.   **The efficiency frontier assesses the relative efficiency of the WAEMU countries in translating public investment (inputs) into infrastructure (outputs).** The data envelopment analysis (DEA) methodology provides a parsimonious model to assess the efficiency of capital spending. It first identifies the countries that achieve the highest results at their level of capital spending through input-out analysis. It then compares other countries to these countries to calculate their relative efficiency through linear programming. The resulting efficiency scores should be interpreted as the proportional amount by which countries could increase the quality of infrastructure while leaving public capital (and other inputs) unchanged.

7.   **The assessment of the efficiency of public investment is carried out with a two inputs-five outputs model over the period 2006–12.**

- Inputs*:* The first input is the real public capital stock per capita.[2] The second is the real GDP per capita as a proxy for the contribution of the private sector to infrastructure provision.[3]

- Outputs*:* To measure infrastructure output, we use the global Competitiveness Indicator provided by the World Economic Forum[4] as well as quantitative measures of infrastructure components, such as the telecommunication (fixed and cellular phones per capita), access to water (percent of population), power generation per capita and airline capacity (km per sq. km).

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[2] See FAD board paper "Making Public Investment More Efficient".

[3] See Gupta and others (2014) and Albino et al (2014) for details on the estimations of public stock.

[4] This qualitative indicator covers many dimensions of the quality of infrastructure obtained from perception survey related to transport and electricity supply.

8.   The results from the analysis suggest that the WAEMU's public investment efficiency compares unfavorably with the benchmark groups (chart). The DEA results show that while WAEMU's investment efficiency is broadly in line with the SSA average, it is lagging behind the peer groups' averages (chart). Given the gap of 10 percent between WAEMU's efficiency and sub-Saharan African benchmark, there is significant scope for improving public investment efficiency.

DEA Efficiency Scores Relative to Selected Economies (2012)	
WAEMU	0.84
SSA, all countries	0.82
SSA, benchmark countries	0.93
Emerging Asia	0.94
Source: IMF staff estimates.	

C. Explaining Public Investment Efficiency

9.   This section tries to identify the main factors explaining public investment efficiency in WAEMU. Albino-War et al (2014), Grigoli and Mills (2014) and Gleb and Grassman (2010) found that countries with weak institutional quality, governments may use capital spending as a vehicle for rent-seeking leading to inefficient public investment. Based on panel regressions covering a sample of sub-Saharan African countries, we regress the efficiency scores on a set of variables: quality of institutions (CPIA macroeconomic management rating, control of corruption, WGI regulatory quality rating), official development assistance (ODA), real GDP per capita, percentage of urban population, the volatility of public, and natural resources dependency (see Annex II for a more detailed description).

10.   Our results suggest that quality of institutions affects public investment efficiency (Table 3). In general, our estimations show a positive correlation between the public investment efficiency and the quality of institution measure by the WGI regulatory quality rating[5] and a negative association between the dependency on natural resource and public investment efficiency. However, the impact estimates are no longer significant for the remaining variables. In particular, a one point improvement in Regulatory Quality will lead to an increase in the efficiency score by 4 percent.

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[5] We estimate different specifications using different quality of institutions proxy; all of them are no longer significant, except for the WGI regulatory quality rating.

Determinants of Infrastructure Investment Efficiency in SSA and Selected Emerging Economies

Dependent variable: Output oriented DEA score (0 to 1)[1]

Independent variables	Estimates	
WGI: Regulatory Quality (-2.5 to 2.5)	**0.039**	***
	(0.012)	
Resource rich dummy variable (1 = rich)	**-0.093**	***
	(0.023)	
Public investment volatility (2005-2012)	-0.738	
	(1.123)	
Percentage of urban population (0 to 1)	0.058	
	(0.062)	
Log of real GDP per capita (000's of US$)	0.016	
	(0.013)	
Official development assistance (% GDP, 0 to 1)	0.002	
	(0.005)	
Constant	**0.916**	***
	(0.033)	
Year dummies	Yes	
Observations	388	
R-squared	0.390	
Number of Countries	73	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
[1] The investment efficiency analysis is restricted to emerging economies with total investment per capita ≤ 30000 US$ (constant 2005).

D.   Improving Public Investment Management to Reduce Efficiency Gap

11.   Improvements in public investment management (PIM) can help countries reduce the "efficiency gap."[6] The growth dividend from doing so is substantial – the most efficient investors get significant growth "bang" for their investment "buck" than the least efficient investors.

12.   WAEMU countries need to identify key public investment management (PIM) institutions that could reduce the efficiency gap. The IMF's new Public Investment Management Assessment (PIMA) framework can help countries evaluate the strength of their PIM practices. The PIMA evaluates 15 institutions that shape decision-making at the three key stages of the public investment cycle (chart):
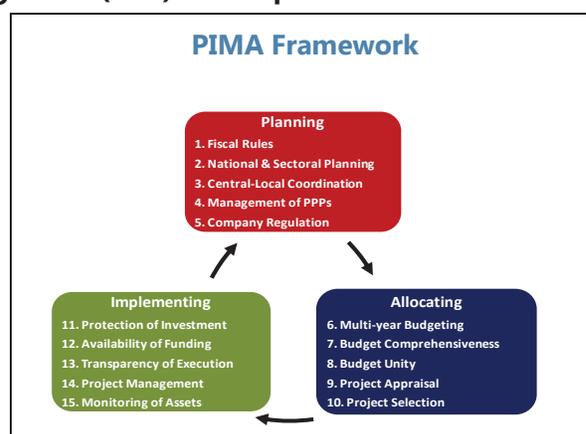
[6] IMF Staff Report, "Making Public Investment More Efficient", June 2015, available at http://www.imf.org/external/np/fad/publicinvestment

Planning sustainable investment across the public sector;
Allocating investment to the right sectors and projects; and
Implementing projects on time and on budget.

13.   The PIMA provides the most comprehensive diagnostic of a country's PIM system. Country results presented in the form of summary charts with comparator countries (chart).The PIMA outlines the relative institutional strengths and weaknesses, and provides practical recommendations to enhance the efficiency and impact of public investment. The IMF, in close collaboration with the World Bank, is piloting PIMA in a number of countries in WAEMU, other countries in SSA and around the world at their requests.

PIMA Results

Strength of Public Investment Management by Institution

1. Fiscal Rules
2. National & Sectoral Planning
3. Central-Local Coordination
4. Management of PPPs
5. Company Regulation
6. Multiyear Budgeting
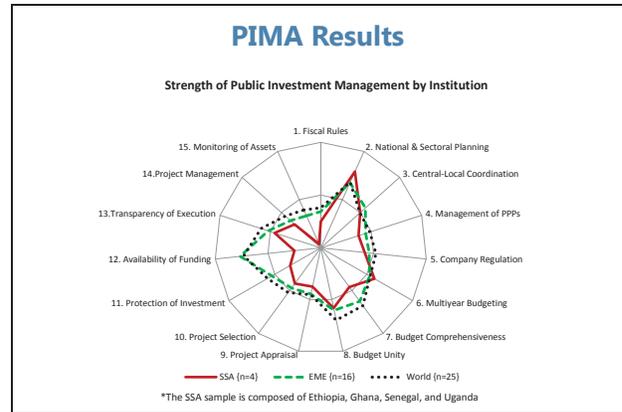7. Budget Comprehensiveness
8. Budget Unity
9. Project Appraisal
10. Project Selection
11. Protection of Investment
12. Availability of Funding
13.Transparency of Execution
14.Project Management
15. Monitoring of Assets

SSA (n=4)   EME (n=16)   World (n=25)

*The SSA sample is composed of Ethiopia, Ghana, Senegal, and Uganda

E. Conclusion and Main Findings

14.   There is substantial room to improve public investment efficiency in WAEMU, in particular by improving the quality of institutions. The analysis finds that WAEMU's public investment efficiency seems weak relative to that of the best performers in SSA, using efficiency frontiers. The regression analysis suggested that stronger institutions could reduce the public investment efficiency gap in WAEMU. WAEMU countries need to evaluate the strength of their PIM practices and identify country-specific PIM institutional priorities for reform. Improving public investment efficiency, in turn, could help boost growth and speed up progress in realizing the development agenda.

References

Dabla-Norris E., R. Allen, L. Zanna, T. Prakash, E. Kvintradze, V. Lledo, I. Yackovlev, and S. Gollwitzer. 2011. "Budget Institutions and Fiscal Performance in Low-Income Countries." IMF Working Paper 10/80, International Monetary Fund, Washington, DC.

Gelb, A., and S. Grassman. 2010. "How Should Oil Exporters Spend Their Rents?" Working Paper 221, Center for Global Development, Washington, DC.

Grigoli F., and Z. Mills. 2014. "Institutions and Public Investment: An Empirical Analysis." *Economics of Governance* 15 (2): 131–53.

Gupta, S., A. Kangur, C. Papageorgiou, and A. Wane. 2014. "Efficiency-Adjusted Public Capital and Growth." *World Development* 57 (C): 164–78.

Albino-War M, Cerovic F, Grigoli F, Flores JC, Kapsoli J, Qu H, Said Y, Shukurov B, Sommer M, and Yoon S. 2014. "Making the Most of Public Investment in MENA and CCA Oil-Exporting Countries" IMF Staff Discussion Note. Paper 14/10. International Monetary Fund, Washington, DC.

Ghura. D and others. 2012. "Macroeconomic Policy Frameworks for Resource-Rich Developing Countries" IMF Policy Paper. International Monetary Fund, Washington, DC.

Annex I. Charts and Figures

Figure 1. Qualitative indicators of infrastructure for selected economies in 2012
(Index value 1 = worst 7 = best)

Overall Qualitative Ratings of Infrastructure
(Global Competitiveness Index, average of second pillar indices)

Qualitative Ratings of Road Infrastructure
(index)

Qualitative Ratings of Rail Infrastructure
(index)

Qualitative Ratings of Port Infrastructure
(index)

Qualitative Ratings of Electricity Infrastructure
(index)

Qualitative Ratings of Air Infrastructure
(index)

Figure 2. Quantitative Indicators of Infrastructure for Selected Economies in 2012

Annual electricity generation (per capita)

Access to water (percent of population)

Landline and cellular phone subscriptions (per capita)

Broadband internet subscriptions (per capita)

Weekly airline capacity (per capita)

Rail lines (average 2007-12, meters per capita)
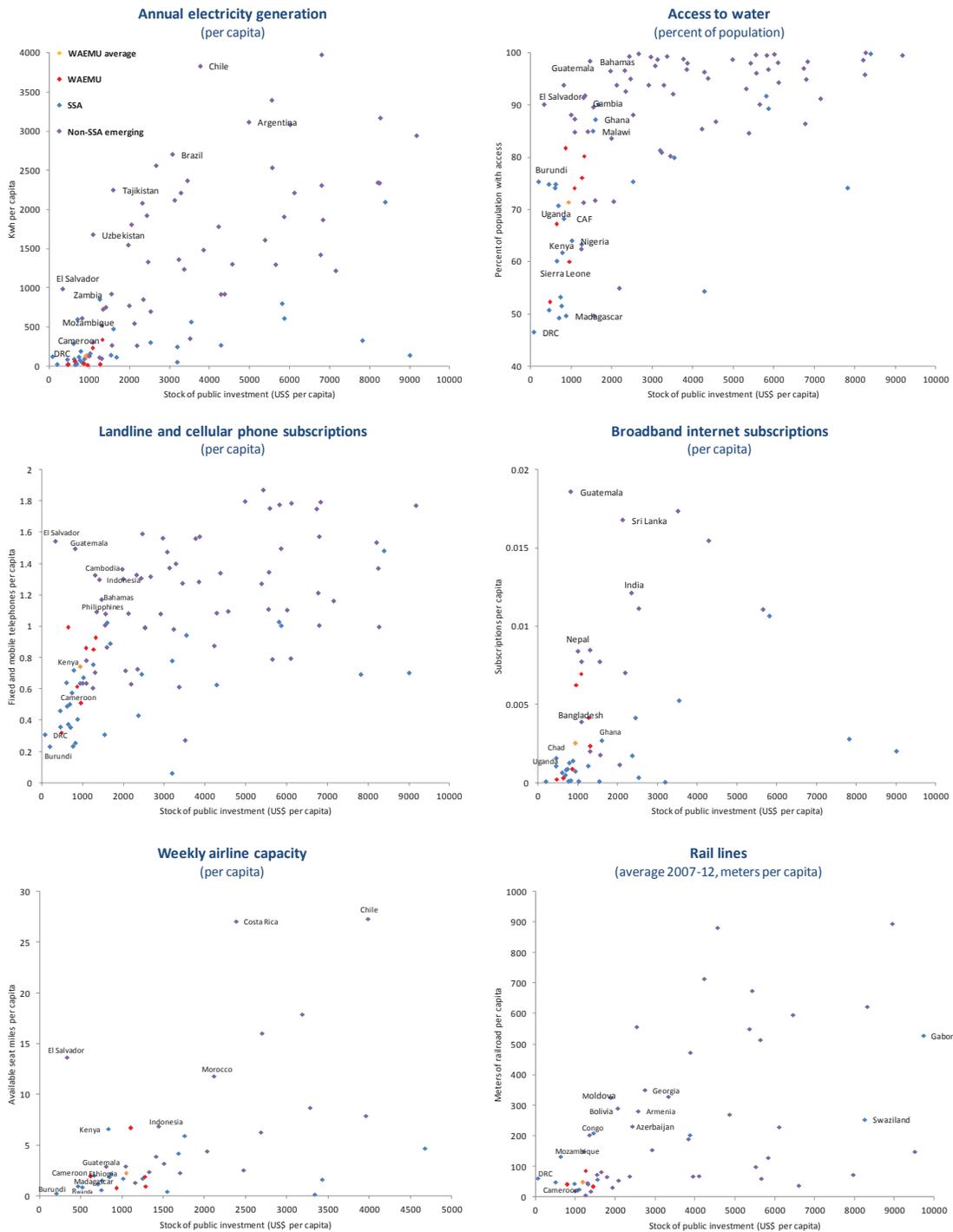
Sources: US Energy Information Administration, World Economic Forum Global Competitiveness Report 2015-16, World Bank World Development Indicators and IMF staff estimates

Annex II. Data Envelopment Analysis and Empirical Research

1. We list below the countries used in the DEA methodology of this chapter. The selection of this set was based on their status as emerging economies with less than 30,000 US$ stock of (public and private) investment per capita. Not all countries are included in the DEA for every year, either due to data availability or a breach of the investment stock threshold. Guinea-Bissau, Togo, and Niger are not included in the analysis as they are not covered by the Global Competitiveness Report.

Sub-Saharan Africa countries

2. Angola, Burundi, Benin, Burkina Faso, Cabo Verde, Cameroon, Chad, Cote d'Ivoire, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali , Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Senegal , Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.

WAEMU

3. Benin, Burkina Faso, Cote d'Ivoire, Mali, and Senegal.

Other Emerging and Developing Economies

4. Albania, Armenia, Azerbaijan, Bangladesh, Barbados, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Cambodia, China, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Georgia, Guatemala, Haiti, Honduras, India, Indonesia, Iran, Islamic Rep., Jordan, Mauritania, Moldova, Mongolia, Montenegro, Morocco, Nepal, Pakistan, Panama, Paraguay, Peru, Philippines, Serbia, South Africa, Sri Lanka, Tajikistan, Thailand, Tunisia, Turkey, Ukraine, Uruguay, and Vietnam.

Our benchmarks groups are listed below. The SSA Benchmark group include countries that have under 4,000 US$ per capita of investment and comparatively higher infrastructure efficiency than the WAEMU average. The Emerging and Developing Asia group is the standard IMF definition.

SSA Benchmark

5. Ghana, Kenya, Malawi and Rwanda.

Emerging and Developing Asia

6. Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, Kiribati, Lao PDR, Malaysia, Maldives, Marshall Islands, Micronesia, Fed. Sts., Mongolia, Myanmar, Nepal, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, and Vietnam.

7. Lastly, we list the resource rich countries that are used in the regression analysis. We use a definition and classification of "resource rich" that can be found in the 2012 IMF policy paper "Macroeconomic Policy Frameworks for Resource-Rich Developing Countries".

Resource Rich Economies

8.   Bolivia, Chile, Ecuador, Guatemala, Mexico, Peru, Venezuela, RB, Trinidad and Tobago, Iran, Islamic Rep., Indonesia, Vietnam, Angola, Botswana, Cameroon, Chad, Ghana, Cote d'Ivoire, Madagascar, Mali, Mauritania, Mozambique, Nigeria, Tanzania, Uganda, Zambia, Azerbaijan, Albania, and Mongolia.

Table 1. WAEMU: Summary of Variables used in Regressions		
Variable name	Description	Source
WGI: Regulatory Quality	Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Takes on values -2.5 to 2.5.	World Bank's World Governance Indicator database.
Resource rich dummy variable	Value is 1 if the country is resource rich. The classification is taken from the appendix of an IMF policy paper.	IMF policy paper: Macroeconomic Policy Frameworks for Resource-Rich Developing Countries (2012)
Public investment volatility	The standard deviation of the flow of public investment (percent of GDP) for the particular country and year. The standard deviation is calculated from available data points between 2007 and 2012 inclusive.	
Percentage of urban population	The percentage of a country's population that live in urban areas. The percentage is expressed as a decimal from 0 to 1.	World Bank World Development Indicators database.
Log of real GDP per capita	The natural log of real GDP per capita, constant 2005 PPP US$.	Penn World Tables 8.1.
Official development assistance	The amount of official development assistance as a percentage of GDP. This number is expressed as a decimal from 0 to 1.	World Bank World Development Indicators database.

FISCAL SPACE IN WAEMU[1]

West African Economic and Monetary Union (WAEMU) countries face an important common challenge of creating sufficient fiscal space to finance ambitious growth, development, and poverty-reduction programs in individual countries. Such additional fiscal space can be created by either enhancing tax revenue or improving the efficiency of spending. While WAEMU countries are broadly in line with comparator countries in total tax collection, WAEMU's tax revenue relies heavily on trade taxes, which will inevitably be reduced by the impending trade liberalization. Also, high reliance on trade taxes makes the WAEMU's revenue base vulnerable to fluctuations of international prices. Panel regression and stochastic frontier analysis suggest substantial room to improve domestic tax collection in the WAEMU by up to 0.8 to 2 percent of GDP. The effort should be country-specific with each government focusing on its underperforming tax category. On the expenditure side, WAEMU countries have significant scope to improve efficiency of their spending on education and health. If all WAEMU countries achieve the spending efficiency of the top performer among them, the fiscal savings on average can add 1 to 3 percent of GDP annually to the available fiscal space of the region.

A.   The Need for Scaling Up

1.   WAEMU countries need to mobilize substantial financial resources to address the infrastructure gap, which has been widely identified as a growth bottleneck. Many studies find that inadequate infrastructure impedes growth (for example, Commission for Africa, 2005 and Foster and Briceño-Garmendia, 2009). Infrastructure development was estimated to have contributed about 1 percentage point to per-capita growth in West Africa in 2001–05 (for example Calderon (2009)). For Benin, Domínguez-Torres and Foster (2011) estimate that infrastructure contributed 1.6 percent points to per capita growth; while in Senegal, Torres, Briceño-Garmendia, and Dominguez (2011) find the contribution was about 1 percent point. Also, raising the two countries' infrastructure endowment to that of Africa's middle-income countries could boost annual growth by 3.2 and 2.7 percentage points respectively. Recent reports also confirmed a continued infrastructure bottleneck in other WAEMU countries (for example, IMF 2013a, b, c).

2.   To finance the scaling up of public investment while preserving macroeconomic stability, WAEMU countries have to use their fiscal space efficiently. While WAEMU countries' external debt levels declined owing to the heavily indebted poor countries (HIPC)multilateral debt relief initiative, leaving some scope for external borrowing, the availability of financing at attractive terms is limited. Also, some countries' total government debt has increased considerably since those countries received the debt relief, which suggests that caution is warranted in additional borrowing.

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[1] Prepared by Karim Barhoumi (AFR), Christine Dieterich (AFR) , Larry Cui (AFR), Sergio Sola (MCD), and Alexander Raabe (The Graduate Institute of International and Development Studies, Geneva)

Therefore, it is essential for the sustainable financing of scaling up infrastructure investment that the two major channels for creating fiscal space be used. These channels are increasing tax revenue and increasing the efficiency of spending.

B. Raising Tax Revenue

3.   Improving tax collection remains the main channel for enlarging the fiscal space. This has been well recognized in the WAEMU, which has a convergence criterion of 20 percent for the tax-to-GDP ratio, even though several member countries have not been in compliance with this criterion for years.

4.   The WAEMU's relatively high indirect tax rates have not resulted in higher tax collection. Indirect tax rates in the WAEMU are higher than the average rates in sub-Saharan Africa and in low-income countries[2], especially for goods and services taxes and trade taxes. However, higher rates have not generated higher revenues. Roughly, the tax-to-GDP ratio has been below the sub-Saharan Africa average throughout the observation period (2000 to 2011), and just broadly in line with the low-income countries average (Figure 1a). Looking at the trend over time, the WAEMU's tax-to-GDP ratio improved from 11.7 percent of GDP in 2000 to 14.7 percent of GDP in 2011, driven by a broad trend in all member countries except Côte d'Ivoire, where results were affected by internal conflicts. However, the size of improvements varied considerably among the countries. For instance, Benin's total tax revenue increased by 2.1 percent percentage points, while Togo's total tax revenue rose by 6.6 percent percentage points.
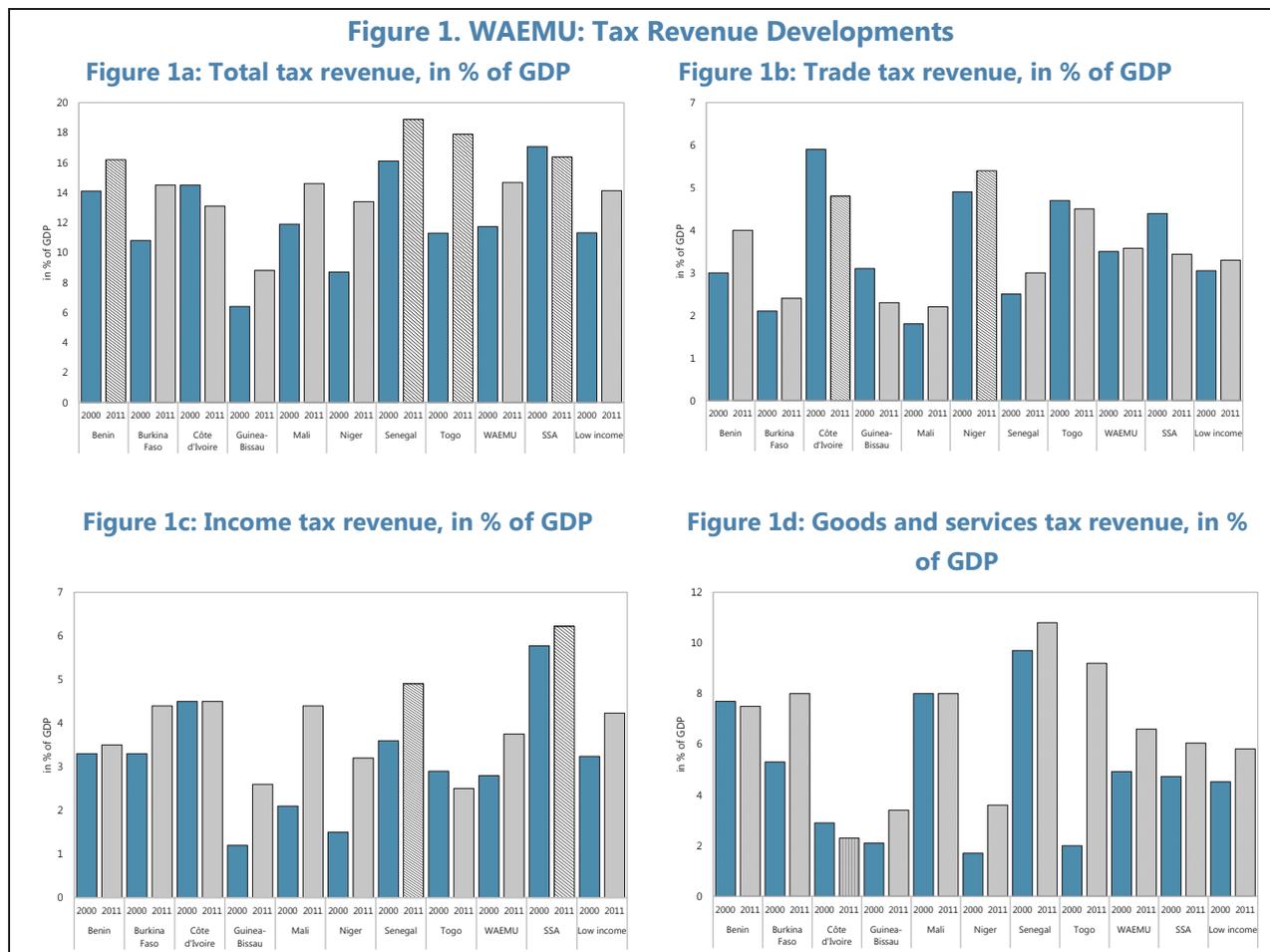
5.   Looking at the performance tax by tax, the improvement in the WAEMU's tax ratio is driven by higher collection from income tax and goods and services taxes, while trade revenues are broadly flat due to limited trade liberalization.

- *Trade taxes*: In contrast with sub-Saharan African and low-income countries, where weighted average tariff rates declined, reflecting trade liberalization over the last decade, the WAEMU's tariff rates dropped only marginally and the tax-to-GDP ratio has remained broadly stable over time. In the comparator groups, sub-Saharan Africa's drop in trade tax revenues reflects the rate decline, while it seems that low-income countries were able to offset the rate decline by efficiency measures that allowed these countries to broadly preserve the trade- tax-to-GDP ratio. (Figure 1b)

- *Personal income taxes*: The WAEMU increased the tax-to-GDP ratio from about 3 to close to 4 percent of GDP, but it remained below the ratios for low-income countries and sub-Saharan Africa. (Figure 1c)

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[2] Excludes upper middle-income countries of South Africa, Botswana, Nigeria, Angola and Namibia. The low-income countries refer to the World Bank definition of countries with a per-capita GNI of $1,025 or less in 2012.

- *Goods and services taxes*: The francophone tradition of relying more on direct than on indirect taxation is reflected in the relatively higher rates. This translates into a higher level of tax revenues than is the case in comparator countries by around 0.6 to 0.8 percent of GDP. Also, the improvement in the WAEMU countries over the observation period was most pronounced in this tax category. (Figure 1d).

6.   WAEMU countries show considerable variation in the drivers for revenue collection by tax categories. For example, in Togo, income tax revenue declined from 2.9 percent to 2.5 percent of GDP, but goods and service tax revenue rose sharply from 2 percent to 9.2 percent of GDP. In Benin, the revenue gain was driven by higher trade tax revenue, while goods and services tax revenue declined. In Cote d'Ivoire, however, the decline in tax revenue was mainly driven by falling trade tax revenues.

Figure 1. WAEMU: Tax Revenue Developments

Figure 1a: Total tax revenue, in % of GDP

Figure 1b: Trade tax revenue, in % of GDP

Figure 1c: Income tax revenue, in % of GDP

Figure 1d: Goods and services tax revenue, in % of GDP

7.   Panel regressions were used to analyze the tax potential of WAEMU countries based on determinants identified in the literature. Drawing on the existing literature on determining tax potential (for example, Gupta, 2007; Davoodi and Grigorian, 2007; and Pessino and Fenochietto, 2010), the following variables were considered as the determinants to estimate the tax potential, which was defined as the maximum level of tax revenue that a country can achieve given its macroeconomic fundamentals: GDP per capita, consumption, gross fixed capital formation, inflation, import and export as a share of GDP, share of agriculture in GDP, share of the urban population, natural resource rents, and broad money as a share of GDP (Annex Table 1.1). Obtaining the tax potential allows for calculating the tax gap, which is the percentage deviation of actual revenue from potential revenue.[3] The regression analysis is not only conducted for total tax revenue, it is also conducted for revenue in the subcategories of goods and services, trade, and income (see Annex Table 1.2 through Annex Table 1.4).

8.   Our analysis suggests that WAEMU countries are ahead of comparator countries in their total tax collection, but have room to improve income tax collection. In 2011, total tax collection in the WAEMU exceeded the potential revenue by around 6 percent and 12 percent when compared with low-income countries and sub-Saharan African countries respectively (Figure 2a). This shows an improvement compared to 2000 when the WAEMU's total tax collection was below potential by around 4 percent compared with both low-income and sub-Saharan African countries. The following factors explain this trend:

*   ***Goods and services taxes*****:** The relative improvement between 2000 and 2011 was mainly driven by a more positive goods and services tax gap (Figure 2b). However, higher tax rates in the WAEMU explain at least part of this positive tax potential.

*   ***Trade taxes*****:** Despite the higher average tariff, our tax potential analysis indicates only a moderately positive tax gap in 2011. However, improvements of the trade tax revenue compared 2000 range from below to slightly above potential (Figure 2c) for both benchmark groups.

*   ***Income taxes***: Revenue performance as measured by the tax gap deteriorated from around -1½ percent to around -5½ percent compared with the gap in sub-Saharan African countries (Figure 2d), and closed only slightly from around -3½ percent to around -2 percent with respect to the low-income country benchmark.

This signals a need for the WAEMU to improve income tax collection compared with the peer groups.

9.   The analysis on the country level shows deviations from the overall WAEMU trend for the tax gap. During the observation period, six of the eight WAEMU members increased their tax

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[3] A positive gap signals that tax revenue collection is above potential. A negative gap implies that tax revenue collection falls short of the potential.

collection efforts compared with what was done in sub-Saharan African and low income countries (Figure 2a). As for income tax revenue collection efforts, only Mali, Niger and Senegal experienced an increase in comparison with the benchmarks (Figure 2c). The goods and services tax gap widened in the case of Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali and Senegal compared with at least one benchmark group (Figure 2b). Among these countries, the trade tax revenue gap closed significantly or turned positive for Benin, Burkina Faso, Niger and Senegal, meaning that the overall improvement for these countries was mostly driven by an improved trade tax collection relative to the benchmarks.[4] In sum, the varied developments within the WAEMU group suggest the need for country-specific policies to improve revenue collection in the identified tax categories.

10.   Similar results were obtained with stochastic frontier analysis. Following Pessino and Fenochietto (2010), the stochastic frontier analysis estimation applies a time-varying parameter of technical inefficiency in tax collection to the different tax categories already discussed in the panel regression analysis. The results confirm the findings using panel regressions, but with some modifications (Figure 3). Namely, regardless of the reference group of countries (sub-Saharan African and low-income countries) used in the estimation, the WAEMU performed relatively well in terms of tax collection. This result, however, seems to be mostly driven by trade taxes. When looking at goods and services and income taxes, WAEMU countries seem to be less efficient compared with sub-Saharan African countries and all low-income countries. The main difference across the two methods is the assessment of the Value Added Tax performance, which was positive in the panel regression approach and negative in the stochastic frontier analysis. In contrast, results were broadly consistent for income tax and trade taxes, even though the stochastic frontier analysis gave a more positive assessment of the trade tax performance than did the panel regression model.

11.   WAEMU countries have substantial room to improve domestic tax collection. WAEMU countries have recently initiated reforms towards trade liberalization, most notably, the introduction of a common external tariff for all Economic Community of West African States countries in January 2015. While the implementation will be gradual, it is expected that trade revenues will decline. Therefore, it is important for the WAEMU to enhance its domestic tax revenue base, in particular, income tax revenues, where both analytical approaches indicate room for improvement by around 0.8 to 2 percent of GDP.
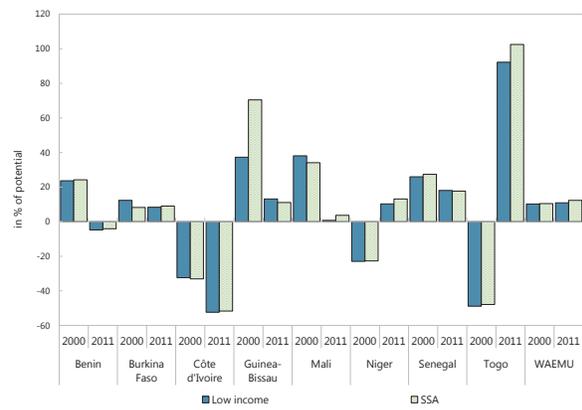
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[4] Regarding the determinants of trade tax potential, we used different models, such incorporating a proxy for the openness or using import/GDP as well as export/GDP separately.
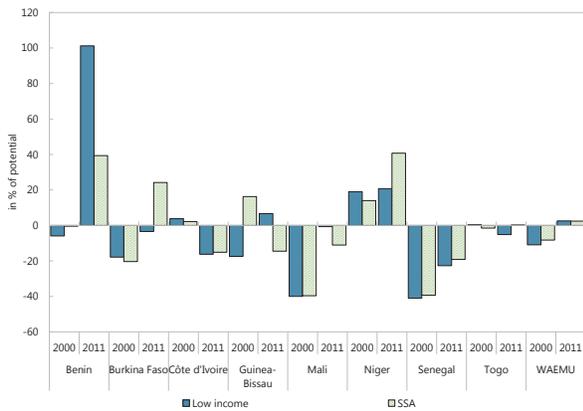
Figure 2. WAEMU: Tax Revenue Gap Analysis
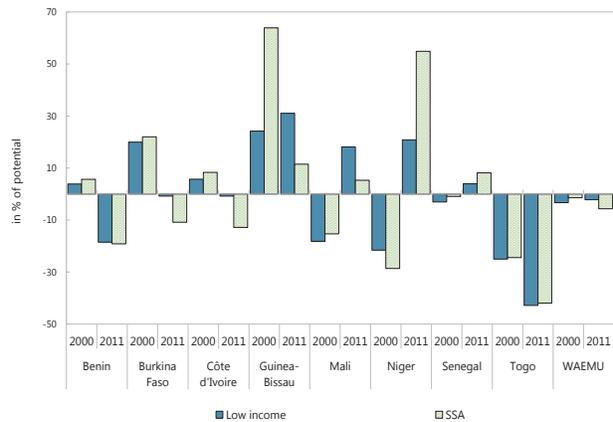
Figure 2a: Total Tax Revenue Gap, In % Of Potential
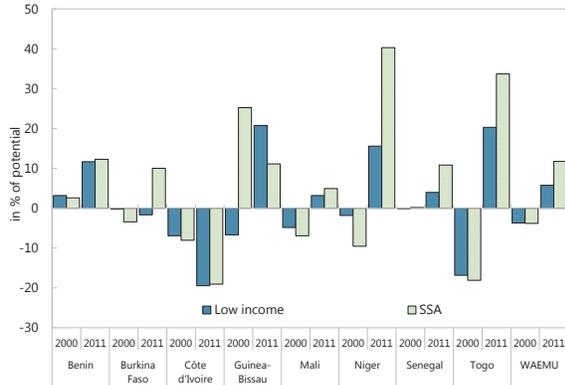
Figure 2b: Goods And Services Tax Revenue Gap, In % Of Potential
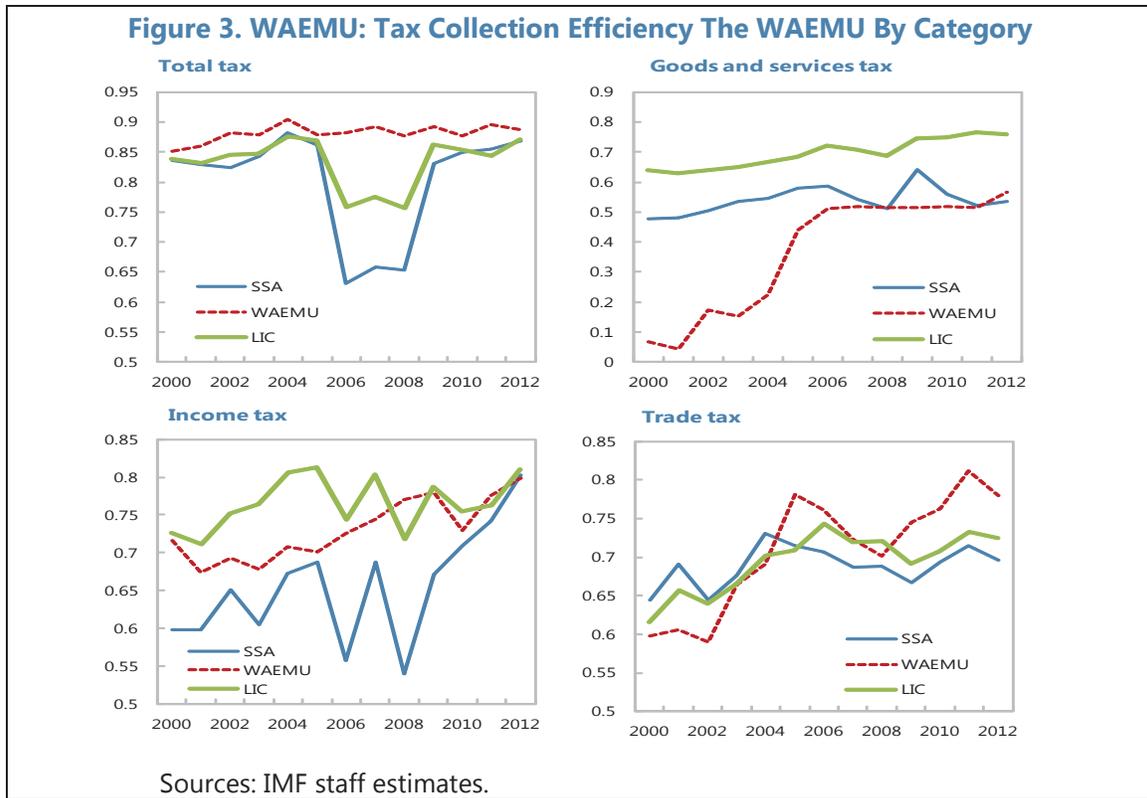
Figure 2c: Trade Tax Gap Revenue, In % Of Potential

Figure 2d: Income Tax Revenue Gap, In % Of Potential

Sources: IMF staff estimates.

Figure 3. WAEMU: Tax Collection Efficiency The WAEMU By Category

Sources: IMF staff estimates.

C. Improving spending efficiency

12.   Is there scope for creating fiscal space by improving the efficiency of public spending?
Our analysis focused on the technical efficiency of translating public spending into the corresponding
results by comparing WAEMU's input-output performance in public spending to those of other sub-
Saharan African countries with similar levels of development. In addition, to reflect WAEMU countries'
aspirations to accelerate growth, specific comparisons with the fast-growing non-resource rich sub-
Saharan African countries were provided.[5] Quantitative assessments were conducted through a
nonparametric data envelopment analysis (DEA).[6] While public spending covers many sectors, only the
education and health sectors were analyzed because these are sectors in which public spending plays a
major role, and consistent cross-country data are readily available. Furthermore, based on data for
2008−12, we estimated the potential budgetary savings from higher efficiency in education and
health to better inform policy discussions.

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[5] These are countries with top growth performance in sub-Saharan Africa, as discussed in IMF (2013d): Ethiopia,
Mozambique, Rwanda, Tanzania and Uganda.

[6] The DEA method has been used in a recent analysis on the efficiency of public spending in Iceland and in cross-
country studies by FAD, such as Belhocine (2013) and Grigoli and Kapsoli (2013).

13.   The DEA methodology provides a parsimonious model at the aggregate level to assess the efficiency of public spending based on cross-country comparison of the input-output relationships. It uses a nonparametric approach to identify an "efficiency frontier" from the input-output relationships across the countries that share the same technology (see Herrera and Pang, 2005 and Grigoli and Kapsoli, 2013 for details). Each country's efficiency is then compared with this frontier in the corresponding range of spending to obtain an efficiency score of between 0 and 100 percent, and variable returns to scales are taken into account in the estimation given the observed patterns of the data. In this analysis, data for 46 low-income and lower-middle income sub-Saharan countries in 2003–12 were used in defining the efficiency frontier. However, data used in estimating potential savings were limited to those from WAEMU countries[7] in 2008–12 to further strengthen the cross-country comparability to arrive at the most realistic estimates.

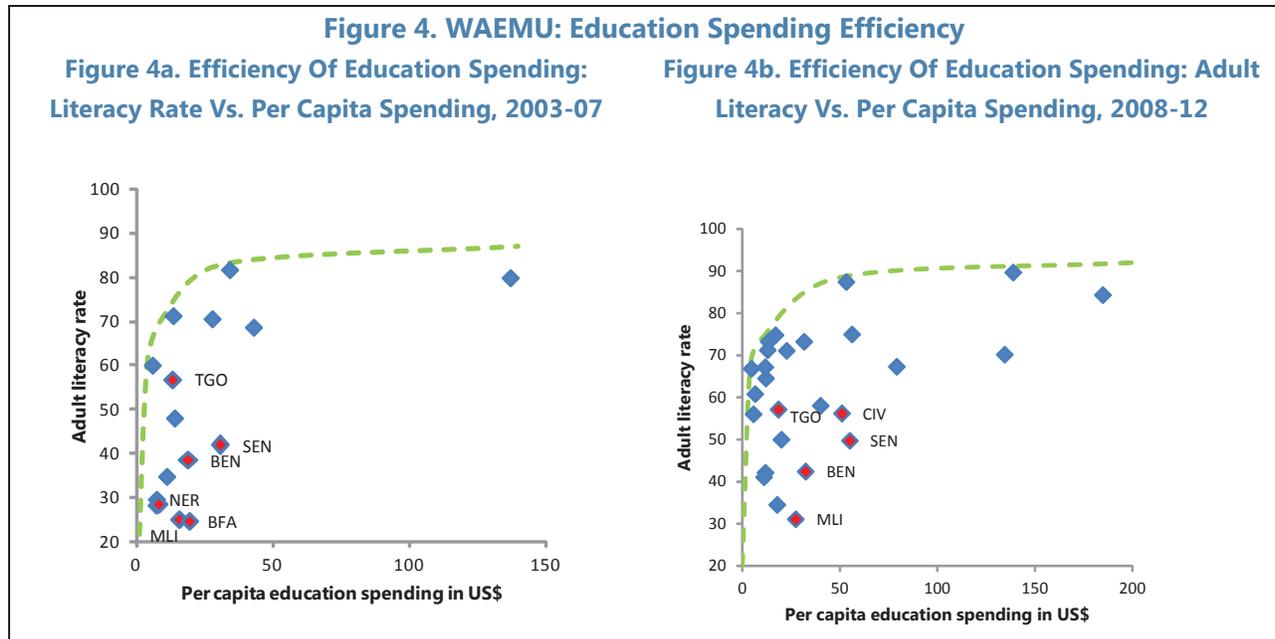**14.   Education sector indicators in WAEMU countries have improved significantly in recent years, largely supported by higher spending.** Between 2003–07 and 2008–12, average education spending increased from 4 percent to 4.4 percent of GDP in WAEMU countries. The increased spending also supported better result indicators, such as an increase of about 14 percentage points in primary school enrollment rates and an increase of about 11 percentage points in adult literacy. But the relative magnitude of the increase in result indicators was less than that of the spending increase. For example, education spending in peer countries remains stable, but achieved a similar increase (11 percentage points) in enrollments and a much higher increase (18 percentage points) in the adult literacy rate—which better reflects the quality of the education. This suggests lower efficiency in WAEMU countries in achieving quality education results, as compared with the fast-growing sub-Saharan African countries.

Education Spending and Result Indicators						
	Education spending in % of GDP		Primary enrollment rates (%)		Adult literacy rate (%)	
	2003-07	2008-12	2003-07	2008-12	2003-07	2008-12
WAEMU mean	4.0	4.4	74.9	88.9	35.4	46.0
Peer country mean	4.9	4.8	90.7	101.5	41.5	59.2
Sources: World Development Indicators, FAD database, and IMF staff calculations						

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[7] Data may not be available for all WAEMU countries, and this limits the coverage of the efficiency and saving estimates.

Figure 4. WAEMU: Education Spending Efficiency

Figure 4a. Efficiency Of Education Spending: Literacy Rate Vs. Per Capita Spending, 2003-07

Figure 4b. Efficiency Of Education Spending: Adult Literacy Vs. Per Capita Spending, 2008-12

15. The quantitative DEA analysis confirms that WAEMU countries rank low in the efficiency of education spending compared with the peers. Despite progress in improving education indicators, WAEMU countries lag behind the peer countries in the technical efficiency of their education spending. This is illustrated by the fact that all WAEMU countries are below the efficiency frontier achieved by the most efficient countries in translating education spending into the result indicators in two periods: 2003–07 and 2008–12 (Figure 4a). For example, at an average public education spending close to 5 percent of GDP in 2008–12, Benin stays well within the efficiency frontier (Figure 4b) and lags behind peer countries (for example, Liberia, Rwanda, and Togo) that are located to the northwest of Benin in the scatter plot chart. This means that these countries achieved a higher adult literacy rate at a lower per-capita spending[8] than did Benin. Another example is Togo, which is closer to the frontier than is Benin, but achieved much lower adult literacy when compared with Uganda, which had the same level of spending. Based on the distance to the efficiency frontier, potential fiscal saving in achieving the same results can be estimated for WAEMU countries. To achieve realistic estimates, the calculation is limited to WAEMU countries that possess similar institutions and development status. Using this method, on average, WAEMU countries could save between 1 and 2 percent of GDP by improving their spending efficiency to the highest level in the Union.

16. Health spending in WAEMU countries has increased significantly and the result indicators have improved. Between 2003–07 and 2008–10,[9] average health spending in the

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[8] Similar analysis using education spending as a share of GDP and the corresponding result indicators yields consistent results.
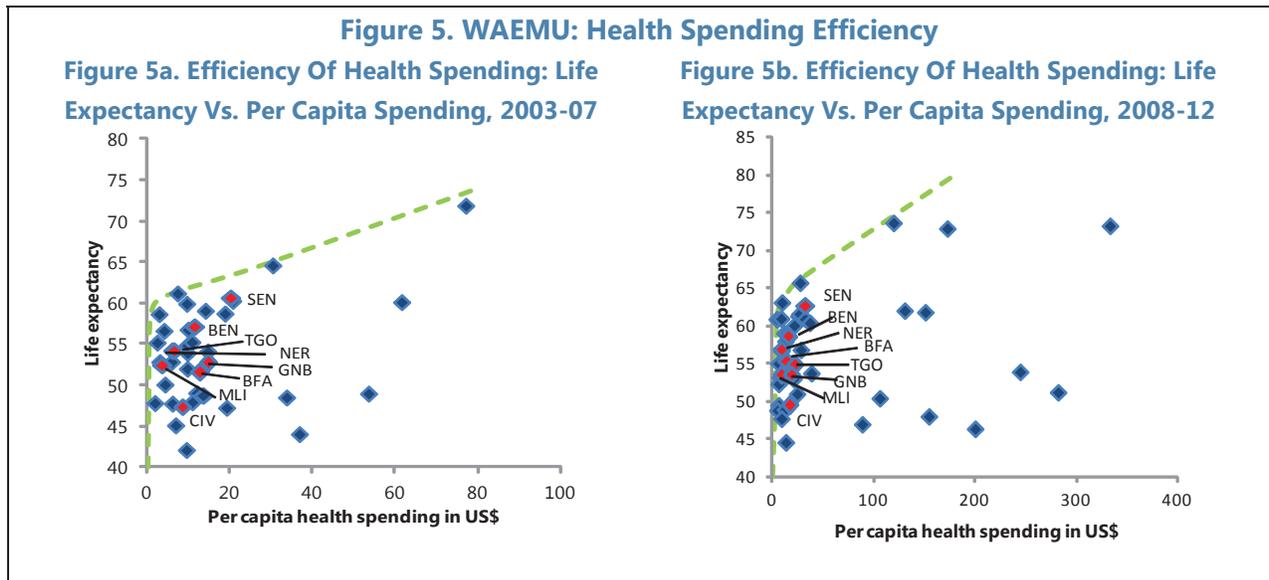
[9] Due to data constraints, the latest period is limited to 2008–10

WAEMU increased from about 2.3 to 2.7 percent of GDP. The results indicators also improved, including an increase in life expectancy of 2 years and a reduction of the child mortality rate by about 3 percentage points. Figure 11b shows that while WAEMU countries are also below the efficiency frontier in general, a few countries moved closer to the frontier in 2008−12 (for example, Burkina Faso, Mali, and Senegal), where result indicators improved faster, relative to the change in public health spending.

Health Spending and Result Indicators								
	public health spending (%GDP)		private health spending (% GDP)		life expectancy (in years)		child survival rates (per 1,000)	
	2003-07	2008-10	2003-07	2008-10	2003-07	2008-10	2003-07	2008-10
WAEMU mean	2.3	2.7	3.3	3.5	53.8	55.6	859.3	887.6
Peer country mean	3.0	3.2	3.3	4.1	53.4	57.6	890.2	923.2

Sources: World Development Indicators, FAD database, and IMF staff calculations

17.   The DEA analysis confirmed that the efficiency of health spending was higher than in education, but there is still a scope for potential savings. In applying the DEA to the health sector, both public and private spending needs to be included. While basic education is generally considered a public good that should be fully supported by public spending, the health sector requires significant private spending beyond public spending to achieve the corresponding results, and thus, the DEA analysis included both sources of spending. Following the same method applied to education spending, WAEMU countries' efficiency score ranges from 43 percent (Guinea Bissau) to 100 percent (Senegal) in the baseline estimate. As a result, the estimated potential savings of increased efficiency of spending on health are about 0.4 to 0.8 percent of GDP on average.

Figure 5. WAEMU: Health Spending Efficiency

Figure 5a. Efficiency Of Health Spending: Life Expectancy Vs. Per Capita Spending, 2003-07

Figure 5b. Efficiency Of Health Spending: Life Expectancy Vs. Per Capita Spending, 2008-12

18.   Improving the efficiency of public education and health spending can contribute not only to increase fiscal space, but also to more inclusive growth in WAEMU countries. Our analysis found that WAEMU countries have significant scope to improve the efficiency of their spending in education and health. If all WAEMU countries could achieve the highest efficiency already reached by the top country in the union, the fiscal savings are estimated to be about 1 to 3 percent of GDP. Therefore, complementary to improved tax efforts, enhancing the efficiency of spending could provide a significant contribution to WAEMU countries' fiscal space to support the scaling up of infrastructure investments. Furthermore, education and health services are essential to enhance the wellbeing of WAEMU citizens and to enhance human capital and build a more productive labor force, and thus improving spending efficiency could also support more inclusive growth.

References

Belhocine, Nazim. 2013. "Assessing Efficiency of Public Spending on Health and Education in Iceland. In *Iceland: Selected Issues*. International Monetary Fund, Washington.

Calderón, César. 2009. "Infrastructure and Growth in Africa," Policy Research Working Paper 4914, World Bank, Washington.

Commission for Africa. 2005. *Our Common Interest: Report of the Commission for Africa*. London: Commission for Africa.

Davoodi, H., and Grigorian, D. 2007. "Tax Potential vs. Tax Effort: A Cross-Country Analysis of Armenia's Stubbornly Low Tax Collection." Working Paper 07/106, International Monetary Fund, Washington.

Domínguez-Torres, Carolina Vivien Foster. 2011. *Benin's Infrastructure: A Continental Perspective*. Policy Research Working Paper 5689, World Bank, Washington

Foster, Vivien, and Cecilia Briceño-Garmendia, eds. 2009. *Africa's Infrastructure: A Time for*

Transformation. Paris and Washington: Agence Française de Développement and World

Bank. http://www.infrastructureafrica.org.

Gupta, Abhijit Sen. 2007. "Determinants of Tax Revenue Efforts in Developing Countries." Working Paper 07/184, International Monetary Fund, Washington.

Herrera, Santiago, and Gaobo Pang. 2005. "Efficiency of Public Spending in Developing Countries: An Efficiency Frontier Approach." Policy Research Working Paper No. 3645, World Bank, Washington.

Grigoli, Francesco, and Javier Kapsoli. 2013. "Waste Not, Want Not: The Efficiency of Health Expenditure in Emerging and Developing Economies" Working Paper 13/187, International Monetary Fund, Washington.

International Monetary Fund (IMF). 2013a. "Benin: 2012 Article IV Consultation and Fourth Review under the Extended Credit Facility Arrangement." Staff Report Côte D'Ivoire, International Monetary Fund, Washington.

———. 2013b. "Côte d'Ivoire: 2013 Article IV Consultation and Fourth Review Under The Extended Credit Facility Arrangement." International Monetary Fund, Washington.

———. 2013c. "Mali: 2012 Article IV Consultation, Request for Disbursement Under the Rapid Credit Facility and Cancellation of the Extended Credit Facility Arrangement." Staff Report, International Monetary Fund, Washington.

Pessino, Carola, and Ricardo Fenochietto. 2010. "Determining Countries' Tax Effort." *Hacienda Pública Española / Revista de Economía Pública* 195(4/2010): 65-87.

Torres, Clemencia, Cecilia M. Briceño-Garmendia, and Carolina Dominguez. 2011. *Senegal's Infrastructure: A Continental Perspective.* Policy Research Working Paper 5817, World Bank, Washington.

Annex I. Regression Results by Tax Category

Annex Table 1. WAEMU: Determinants of total tax potential

Total Tax revenue (% of GDP)	LICs	SSA
GDP per capita	5.133***	2.637
	[1.571]	[1.879]
Inflation, consumer prices (annual %)	0.001	0.002
	[0.013]	[0.013]
Imports (% of GDP)	0.126**	-0.090
	[0.060]	[0.089]
Exports (% of GDP)	-0.019	0.128
	[0.058]	[0.102]
Agriculture (% of GDP)	-0.087*	-0.166**
	[0.046]	[0.062]
Consumption(% of GDP)	-0.009	0.105
	[0.052]	[0.093]
Gross fixed capital formation (% of GDP)	-0.028	0.077
	[0.058]	[0.098]
Urban population (% of total)	0.126	0.109
	[0.081]	[0.138]
Total natural resources rents (% of GDP)	0.020	-0.015
	[0.021]	[0.043]
M2 (% of GDP)	0.006	-0.001
	[0.039]	[0.027]
Constant	-27.967*	-14.466
	[13.758]	[17.255]
Observations	571	707
Number of id	33	38
R-squared	0.445	0.113
R2	0.435	0.101
Robust standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1		

Annex Table 2. WAEMU: Determinants Of Trade Tax Potential

Trade tax revenue (% of GDP)	LICs	SSA
GDP per capita	-0.250	-1.545
	[0.739]	[1.375]
Inflation, consumer prices (annual %)	-0.005***	-0.004
	[0.001]	[0.003]
Imports (% of GDP)	0.050***	-0.034
	[0.012]	[0.045]
Exports (% of GDP)	0.009	0.021
	[0.018]	[0.040]
Urban population (% of total)	-0.036	-0.012
	[0.088]	[0.204]
Total natural resources rents (% of GDP)	0.019	-0.008
	[0.014]	[0.034]
trend	-0.040	-0.009
	[0.049]	[0.115]
Constant	4.878	17.929*
	[5.736]	[9.827]
Observations	590	716
Number of id	33	38
R-squared	0.204	0.036
R2	0.194	0.0261
Robust standard errors in brackets		
*** p<0.01, ** p<0.05, * p<0.1		

Annex Table 3. WAEMU: Determinants Of Income Tax

Income tax revenue (% of GDP)	LICs	SSA
GDP per capita	1.964***	2.370***
	[0.592]	[0.626]
Agriculture (% of GDP)	-0.015	-0.035*
	[0.020]	[0.020]
Consumption (% of GDP)	0.027***	0.025*
	[0.007]	[0.013]
Gross fixed capital formation (% of GDP)	0.024**	0.010
	[0.010]	[0.013]
Urban population (% of total)	0.045	0.091**
	[0.026]	[0.035]
Total natural resources rents (% of GDP)	0.023**	0.006
	[0.010]	[0.014]
M2 (% of GDP)	0.019***	0.023**
	[0.007]	[0.009]
Public wage bill (% of GDP)	0.196***	-0.000***
	[0.042]	[0.000]
Constant	-15.962***	-19.051***
	[4.419]	[5.101]
Observations	461	629
Number of id	25	35
R-squared	0.462	0.201
R2	0.452	0.191

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Annex Table 4. WAEMU: Determinants Of Goods And Services Tax

Goods and services tax revenue (% of GDP)	LICs	SSA
GDP per capita	3.956***	4.415***
	[1.370]	[1.270]
Inflation, consumer prices (annual %)	0.006	0.006
	[0.008]	[0.006]
Agriculture (% of GDP)	0.004	-0.026
	[0.037]	[0.036]
Gov. consumption (% of GDP)	0.014	0.023
	[0.069]	[0.046]
Household consumption (% of GDP)	-0.038	0.042
	[0.054]	[0.037]
Gross fixed capital formation (% of GDP)	-0.042	0.003
	[0.054]	[0.034]
Urban population (% of total)	0.157**	0.129*
	[0.072]	[0.064]
M2 (% of GDP)	0.013	0.023
	[0.016]	[0.019]
Imports (% of GDP)	0.081	0.021
	[0.060]	[0.036]
Exports (% of GDP)	-0.043	0.021
	[0.063]	[0.035]
Constant	-26.563**	-37.550***
	[11.500]	[9.178]
Observations	571	698
Number of id	33	38
R-squared	0.349	0.397
R2	0.338	0.388
Robust standard errors in brackets		
*** p<0.01, ** p<0.05, * p<0.1		

FINANCIAL STABILITY, DEVELOPMENT AND INCLUSION IN THE WAEMU[1]

Based on most recent indicators of stability, deepening and inclusion, this paper provides comparative evidence of the situation of WAEMU in several areas of financial development relative to groups of benchmark countries. A regression of the volatility of growth on financial development highlights that the volatility of growth in the WAEMU over the last decades could have been substantially lower if financial development was at the levels of Asian or African benchmark groups.

A. Introduction

1. **While growth of credit to the economy is robust, there are significant gaps in the financial development in the region.** Credit to the economy continues to grow robustly at around 15 percent year on year and the average WAEMU country's credit to GDP level is in line with its macroeconomic fundamentals (see also IMF 2015). However, the region is facing challenges in other dimensions of financial development. On the regulatory and financial stability side, prudential standards in WAEMU are weak by international standards and not well enforced. Indicators of financial inclusion have improved recently but are lagging behind both a group of African (Ghana, Kenya, Lesotho, Rwanda, Tanzania, Uganda, and Zambia) and Asian (Bangladesh, Cambodia, India, Laos, Nepal, and Vietnam) countries with whom the WAEMU shared similar levels of development in the 1990s but which have since then experienced faster growth.

2. **As these benchmark countries have also experienced a decline in the volatility of growth over the same horizon, the question arises in how far this observed stability has been driven by developments in the financial sector**. Growth in the WAEMU has been volatile, even when excluding large movements in real GDP per capita growth in Cote d'Ivoire due to episodes of political instability (Figure 1). As African and Asian benchmark countries which have on average succeeded to increase financial development more strongly, have also witnessed lower volatility of growth over the last decade, the question arises to what extent further financial development in the region could mitigate

Figure 1. WAEMU: Relative Volatility, 1994-2013
(Ratio of Standard Deviation to Average Growth per Period)

Sources: WEO, country authorities, and staff estimates

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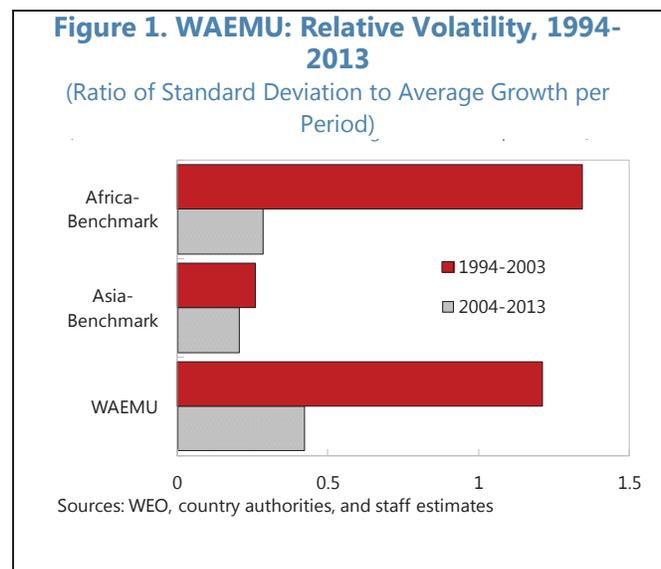
[1] Prepared by Rachid Awad, Monique Newiak and Yanmin Ye

these growth swings. To answer this question, this note uses the recently developed index of financial development by Sahay and others (2015), and tests for its economic and statistic significance in a panel regression, together with standard determinants of growth volatility. The results suggest that difference in financial development in the WAEMU compared to the African and Asian benchmark countries can account for 10 percent of the difference in the volatility of growth between the WAEMU and these groups in the last decades. In addition, as pointed out by Sahay and others (2015), a more developed financial sector could also boost growth itself.

3.   **The paper proceeds as follows**. The next three sections give an overview of recent financial developments in (i) banking and financial stability, (ii) financial inclusion, including micro-finance, and (iii) a composite index of financial stability. The fourth section analyses the role financial development, among other factors, has played in mitigating the volatility of growth.

B.   Developments in Banking and Financial Stability

4.   **The WAMU's banking sector has been growing at a steady pace over the last few years, with variations across member countries** (Figure 2, chart 1 and 2). This growth which averaged 15 percent a year reflects the continuing development of banking activities and products and their reach in the WAEMU area. It also underscores an increasing contribution to finance the economy. While credit to the private sector remains one of the main banking activities, banks sovereign exposures appear to be on the rise reaching more than 26 percent of total assets in 2015 (Figure 2, chart 3 to 6).

5.   **Banks' prudential indicators continue to be relatively weak and underperform their peers in sub-Saharan Africa (SSA), and regulatory requirements are weaker** (Figure 3, charts 1 to 4). Preliminary data indicate that capital adequacy has risen to around 12 percent in June 2015 (from9.6 percent in June 2014) but this is still significantly less from averages of 18 percent seen in SSA countries. In addition, lower credit quality remains a significant deterrent to WAMU banks' solidity. In fact, banks' gross NPLs reached 15.8 percent of total loans in 2014 and net NPL amounted to 33.5 percent of banks' capital, both significantly worse than the SSA respective 8 percent and 10.7 percent levels, despite the Banking Commission's efforts into building operational capacity and enhancing banking supervision in the last few years, in particular after the disruptions of its activity in the wake of the Côte d'Ivoire crisis in 2011. The position of WAMU countries with respect to capital adequacy and credit quality may be worse if we take into consideration that capital adequacy in WAMU banking sector is still based on Basel I rules (while some other SSA countries have already moved to Basel II / III) and that loan classification rules are laxer than international requirements.

6.   **The regulatory reforms in progress by the BCEAO go in the right direction.** Efforts by regulatory and supervisory authorities to align the regulatory framework with Basel II and III standards are welcome. However, an equal importance should be given to enforcement of prudential limits. This remains an issue in WAMU where 25 percent of the number of banks on average is in violation to prudential requirements. Moreover, the regulatory and supervisory

framework needs to cover other aspects related to effective supervision, notably consolidated supervision.

C. Developments in Financial Access

7. **Access to financial services has increased in most WAMU countries but remains lower than in benchmark countries** (Figure 4, chart 1–2). Access to financial services, as measured by the share of the population with a bank account, has increased significantly in most WAMU countries from 2011 to 2014. The share of the population with an account has more than doubled in Senegal from almost 6 to almost 12 percent, and Niger from a low level of 1½ percent to almost 3½ percent. Benin, Togo, and Mali have seen increases of more than 50 percent in these shares. Moreover not all groups of the population have benefited equally from this increase in access (Figure 4, chart 3–6). Financial access gaps across gender, age, education and income remain relatively high, and have even increased in some cases. The share of the population in possession of a debit or credit card also remains multiple times lower in WAEMU countries as compared to the benchmark groups.

D. Developments in Microfinance

8. **While micro-finance activities have been steadily increasing in WAEMU, they are still low relative to those of the banking sector**. There were around 724 Micro-finance Institutions (MFIs) at end June 2015 (Figure 7). Their deposits and credit activities witnessed a steady average annual increase of 12.2% and 9.9% respectively. However, the size of these activities is still very low compared to banking sector. While microfinance institutions have been a strong tool to promote financial inclusion in WAEMU, they have posed some challenges, including weak credit management, poor governance, lacking information systems and internal controls, weak application of prudential rules, and existence of some MFIs without proper licenses. In order to address these issues, WAMU authorities have proceeded to liquidation and license revocation of many MFIs and closure of a large number of unlicensed MFIs. Some of the solutions taken by WAMU authorities were also to regroup some small MFIs into networks, ensure a close monitoring of problematic MFIs and place some of them (13 as of June 2015) under temporary administration. Moreover, the initiatives taken by the BCEAO to establish a regional financial inclusion strategy and the creation of a credit information reporting system for MFIs are also additional tools to enhance the stability of this system and allow it to play its intended role.

Figure 2. WAEMU: Growth of the WAMU Banking System

*The Banking system has been growing steadily over the last years....*

Evolution of WAMU Banking Assets (M CFAF)
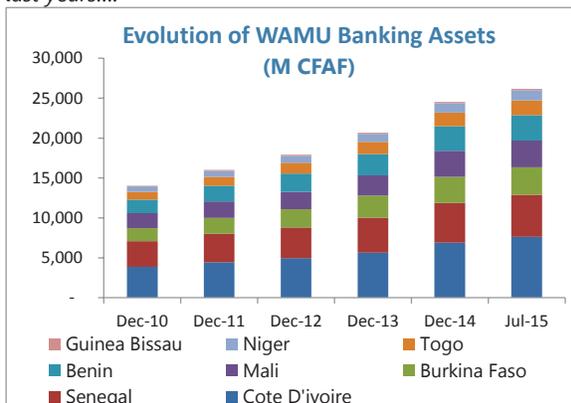
... but the growth has varied across WAMU countries

Growth of WAMU Banking Assets by Country
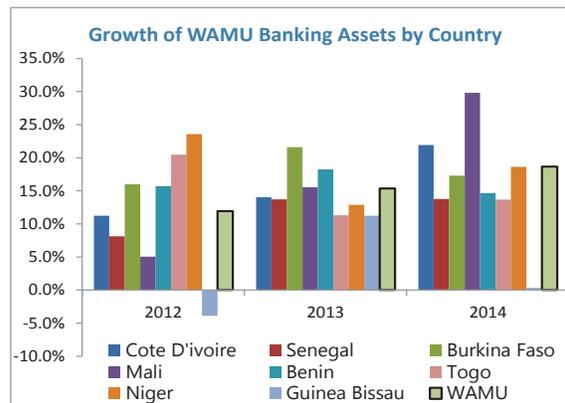
Credit to private sector has been growing at a decelerating pace; gross foreign assets have been decreasing while sovereign claims have been steadily increasing.

Growth of Main Assets
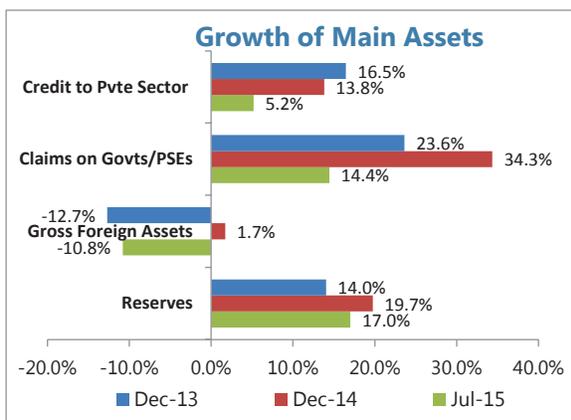
As a result, sovereign exposures now account for more than 25 percent of banking system assets and credit to private sector has slightly decreased relative to the asset base.

Asset Composition (Main Items)
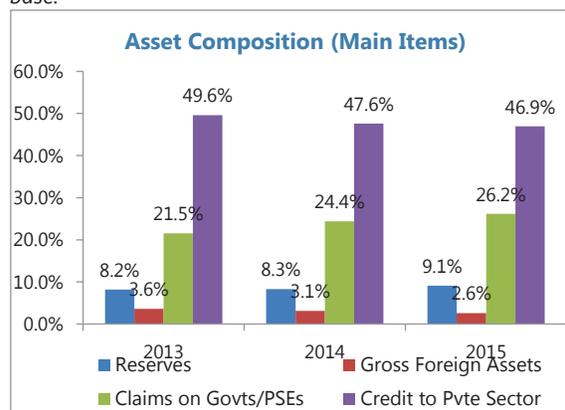
While Foreign liabilities have been steadily increasing, the huge increase in BCEAO credit to banks in last years has receded during the beginning of this year.

Growth of Main Liabilities
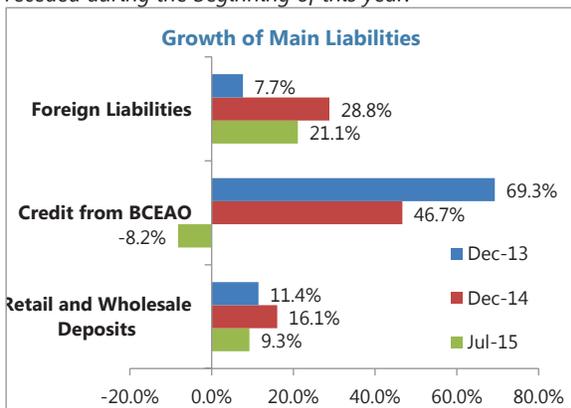
However, financing operations from BCEAO still constitute a good part of banks' liabilities and foreign liabilities are becoming more significant.

Liability Composition (Main Items)
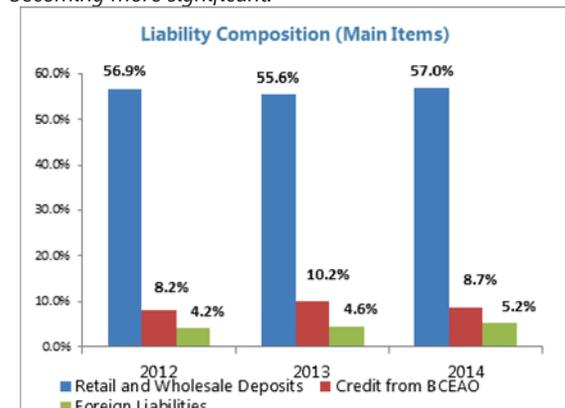
Figure 3. Some WAMU Banks' Prudential Indicators

While capital adequacy for WAMU banking system has increased, it is still low with some countries witnessing ratios close to minimum levels.

Capital Adequacy of WAMU Banks by country

Cote D'ivoire ■ Senegal ■ Burkina Faso
Mali ■ Benin ■ Togo

WAMU banks' capital adequacy is still low compared with SSA countries averages.

Banks' Capital Adequacy: WAMU vs. SSA

■ WAMU ■ Sub-Saharan Africa
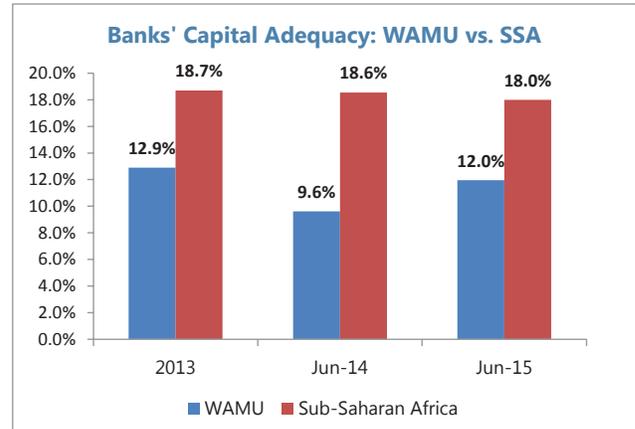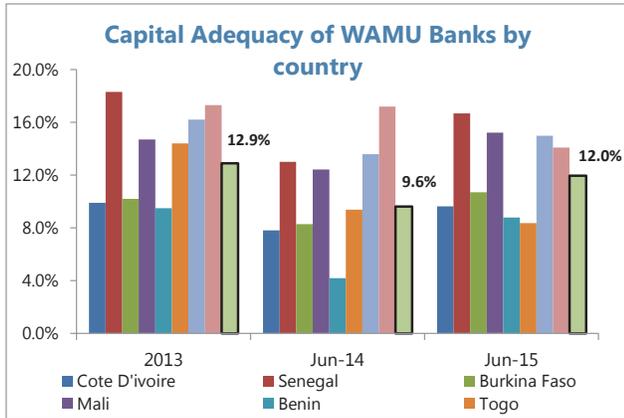
Net Non-Performing Loans (NPL) to total loans have slightly increased recently.

Net NPL to Total Loans in WAEMU Countries

Benin ■ Burkina Faso ■ Cote D'Ivoire
Guinea Bissau ■ Mali ■ Niger
Senegal ■ Togo ☐ WAMU

WAMU countries have much higher NPL ratios in comparison with SSA averages.

NPL Ratios WAMU vs. SSA
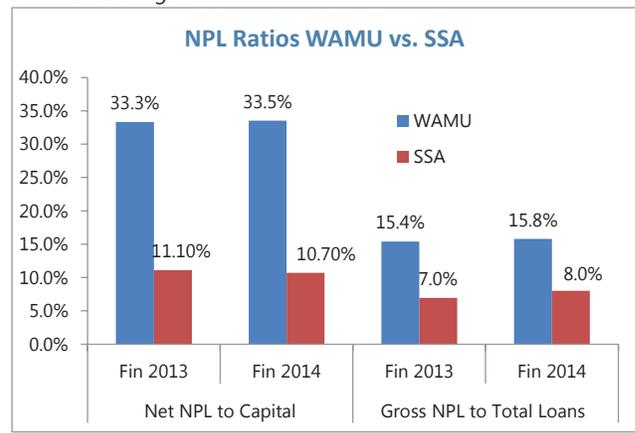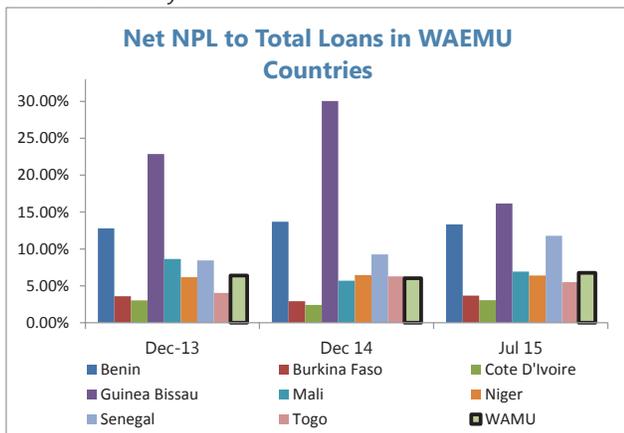
Figure 4. WAEMU: Access to Financial Services

Access to an account at a financial institution has increased in most WAEMU countries but remains far below benchmark levels.

Account at a Financial Instiution
(Percent of People Age 15+)

Source: Findex (2014)

Penetration of credit and debit cards remains low.
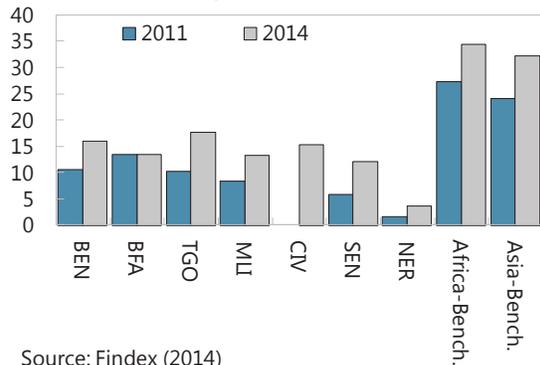
Debit or Credit Card
(Percent of People Age 15+)
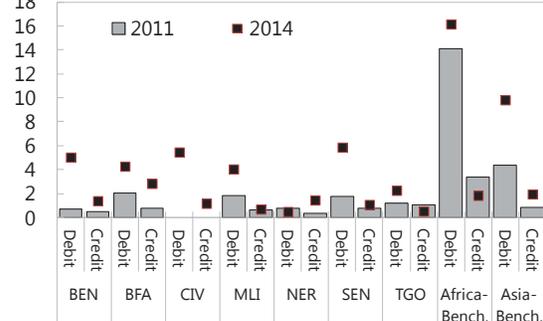
Source: Findex (2014).

While both men and women have profited from this increase on average, men have profited over-proportionately in some countries.

Account at a Financial Instiution
(Percent of People Age 15+, by Gender)

Source: Findex (2014).

Younger adults are much less likely to have an account at a financial institution...

Account at a Financial Instiution
(Percent of People Age 15+, by Age)
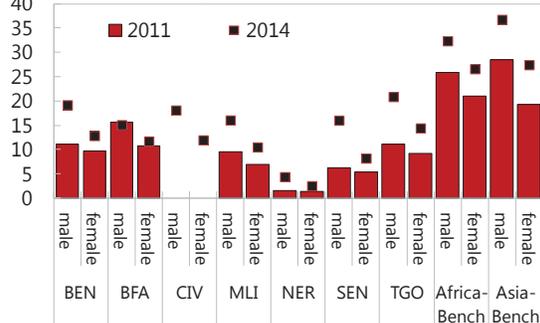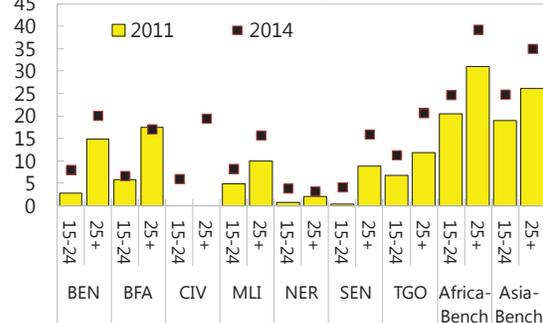
Source: Findex (2014).

...as are the less educated parts of the population...

Account at a Financial Instiution
(Percent of People Age 15+, by Education)

Source: Findex (2014).

...and the poorer parts of the population
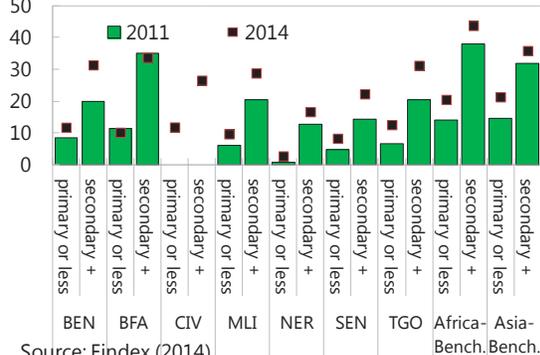
Account at a Financial Instiution
(Percent of People Age 15+, by Income)
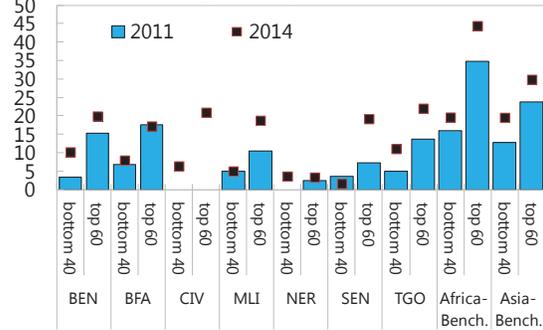
Source: Findex (2014).

Figure 5. WAEMU: Use of Financial Services

The number of people saving at a financial institution has not increased proportionately...
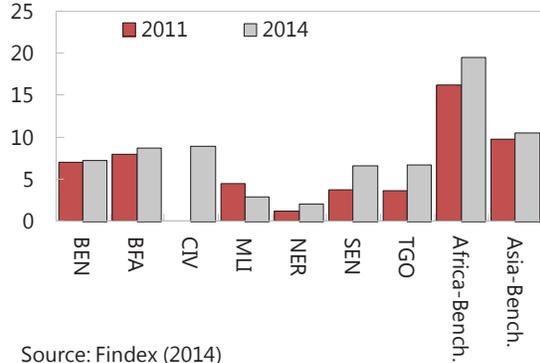
...and trends in borrowing have also been mixed...

Saved at a Financial Instiution
(Percent of People Age 15+)

Source: Findex (2014)

Borrowed from a Financial Instiution
(Percent of People Age 15+)
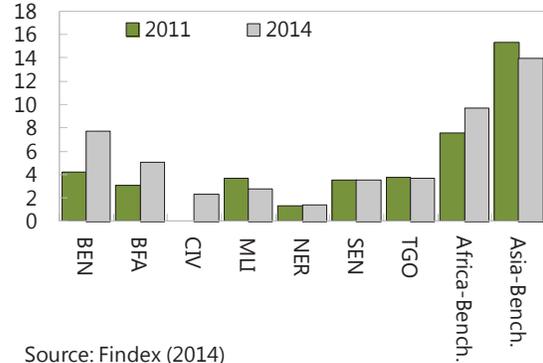
Source: Findex (2014)

While borrowing from friends remains high and comparable to benchmark countries...

...Borrowing from informal lenders is low and has decreased in some cases.

Borrowed from Family or Friends
(Percent of People Age 15+)

Source: Findex (2014)

Borrowed from Private Informal Lender
(Percent of People Age 15+)
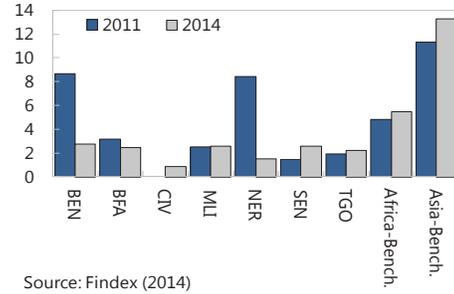
Source: Findex (2014)

Figure 6. WAEMU: Use of Financial Services by Groups of Population

The percent of women borrowing from financial institution is higher than that for men in some countries.

The percentage of the young adult population borrowing from a financial institution is insignificant...

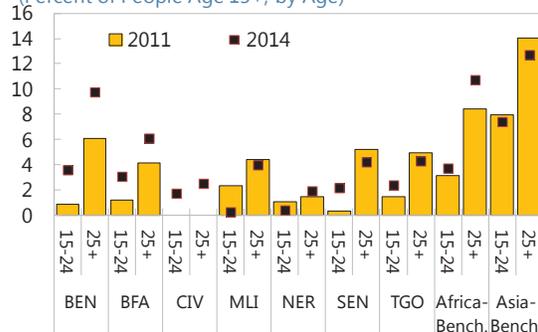**Borrowed from Financial Instiution**
(Percent of People Age 15+, by Gender)

Borrowed from Financial Instiution
(Percent of People Age 15+, by Age)

Source: Findex (2014).

Source: Findex (2014).

...as remains the share of those borrowing with primary or less education...

... and that by the poorest end of the population.

Account at a Financial Instiution
(Percent of People Age 15+, by Education)

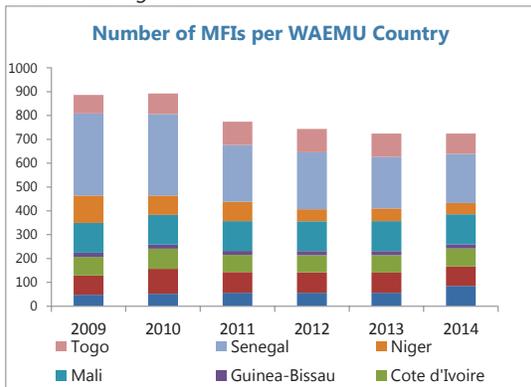**Account at a Financial Instiution**
(Percent of People Age 15+, by Income)
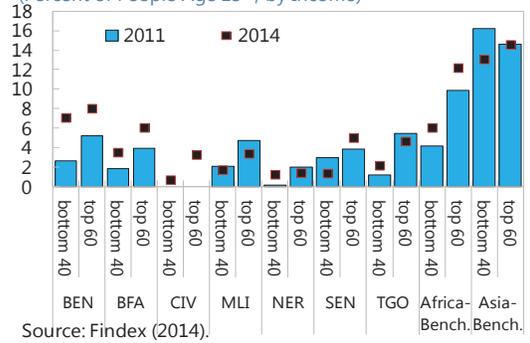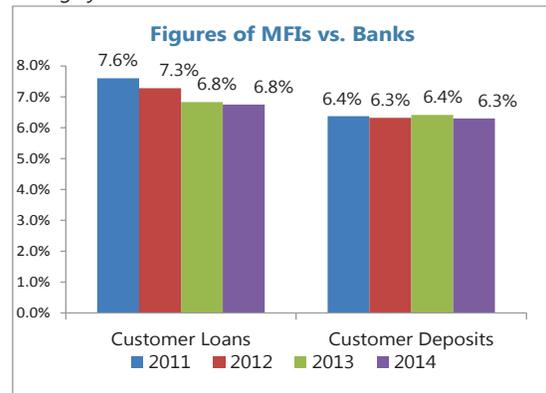
Source: Findex (2014).

Source: Findex (2014).

Figure 7. WAEMU: The Evolution of Microfinance Activities in WAEMU

Number of MFIs has been decreasing with the largest number in Senegal ...

Number of MFIs per WAEMU Country

... but the system has been steady and small relative to the banking system

Figures of MFIs vs. Banks

MFI deposits have been constantly increasing ...
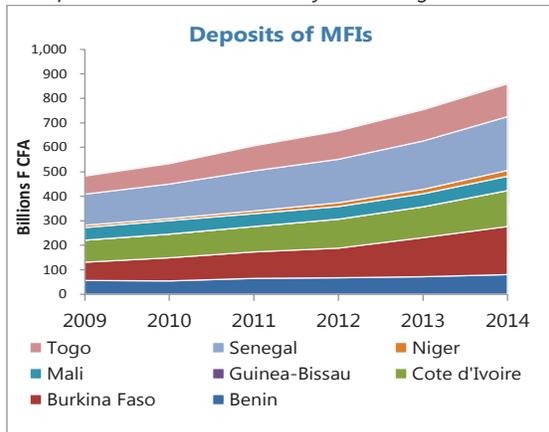
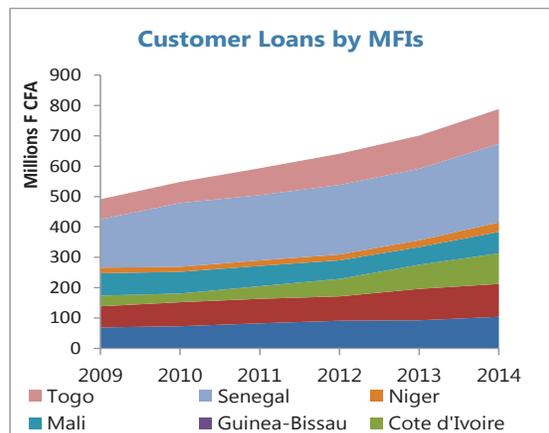**Deposits of MFIs**

... and Senegal and Burkina Faso still dominate the market

Distribution of MFI deposits by countries 2014
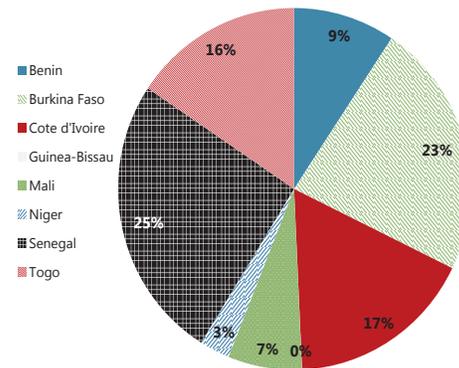
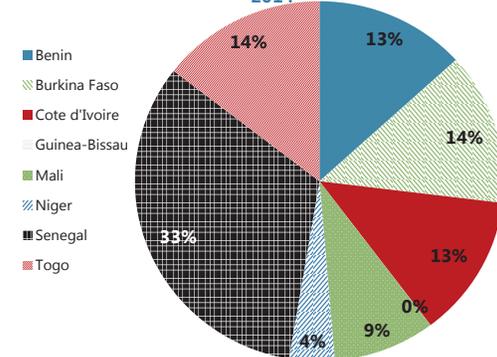*Customer loans have also been steadily increasing ...*

Customer Loans by MFIs

... Senegal also dominates the market with few other players

Distribution of Customer Loans by Country 2014

E. Composite Measure of Financial Development

9.   A composite measure helps rank the WAEMU's performance in terms of financial development across several dimensions. The new broad-based index of financial development by

Svirydzenka (2016) and Sahay and others (2015) helps benchmarking the WAEMU against benchmark groups according to its financial institutions and markets. Financial institutions are measured by access (number of bank branches and ATMs per 100,000 adults), depth (private sector credit to GDP, pension fund assets to GDP, mutual fund assets to GDP, insurance premium to GDP), and efficiency (net interest margin, lending-deposit spread, non-interest income to total income, overhead costs to total assets, return on equity). Financial markets are also measured along these dimensions, with depth captured by the stock market capitalization to GDP, stocks traded to GDP, among other indicators, access being measured by the percent of market capitalization outside of top 10 largest companies and the total number of issuers of debt, and efficiency being represented by the stock market turnover ratio.

10.   The composite measure of financial inclusion suggests that the WAEMU lags behind benchmark groups with respect to the development of financial institutions and markets. Figure 8 highlights the WAEMU's performance along these indicators. While the WAEMU's level of financial development was similar to that of other regions in the 1980s and 1990s, it was outperformed, especially by the Asian benchmark group in the 2000s and today. While there is a significant difference between the WAEMU's performance in financial institutions compared to the Asian benchmark, the difference is even larger for the financial markets index. In particular, the financial market development appears insignificant in most WAEMU countries, except for Cote d'Ivoire. However, these low levels are comparable to the group of African benchmark countries.
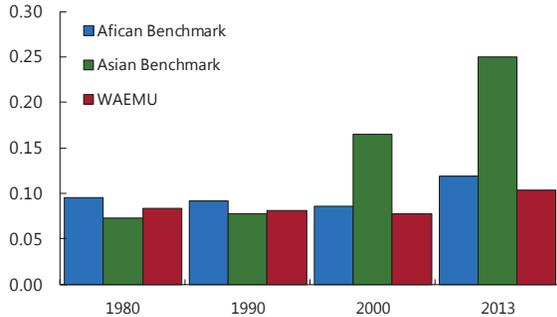
Figure 8. WAEMU: Benchmarking Financial Development

While having started at similar levels of financial development in the 1980s and 1990s WAEMU countries are now outperformed by benchmark groups...

...The difference in financial institutions to benchmark to Asian benchmark groups is significantly large.

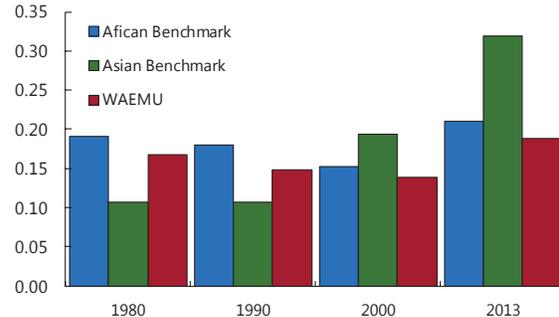### Financial Development Index
(0-low; 1-high)

Sources: Svirydzenka (forthcoming).

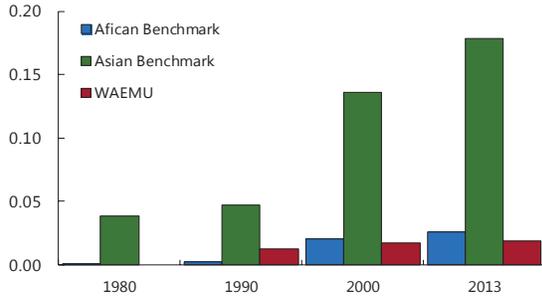### Financial Institutions Index
(0-low; 1-high)

Sources: Svirydzenka (forthcoming).

But it is particularly large for financial markets.

Financial market development is insignificant in most WAEMU countries, except for Cote d'Ivoire.
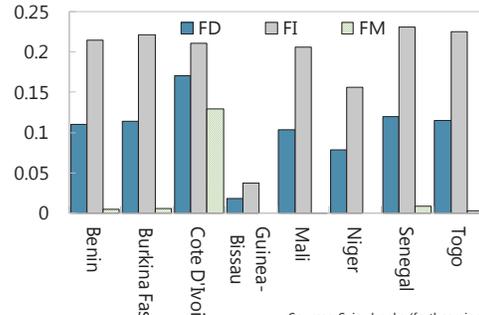
Financial Markets Index
(0-low; 1-high)

Sources: Svirydzenka (forthcoming)

Indices of Financial Development, 2013
(0-low, 1-high)

Sources: Svirydzenka (forthcoming).

F. Financial Development and Volatility of Growth in the WAEMU
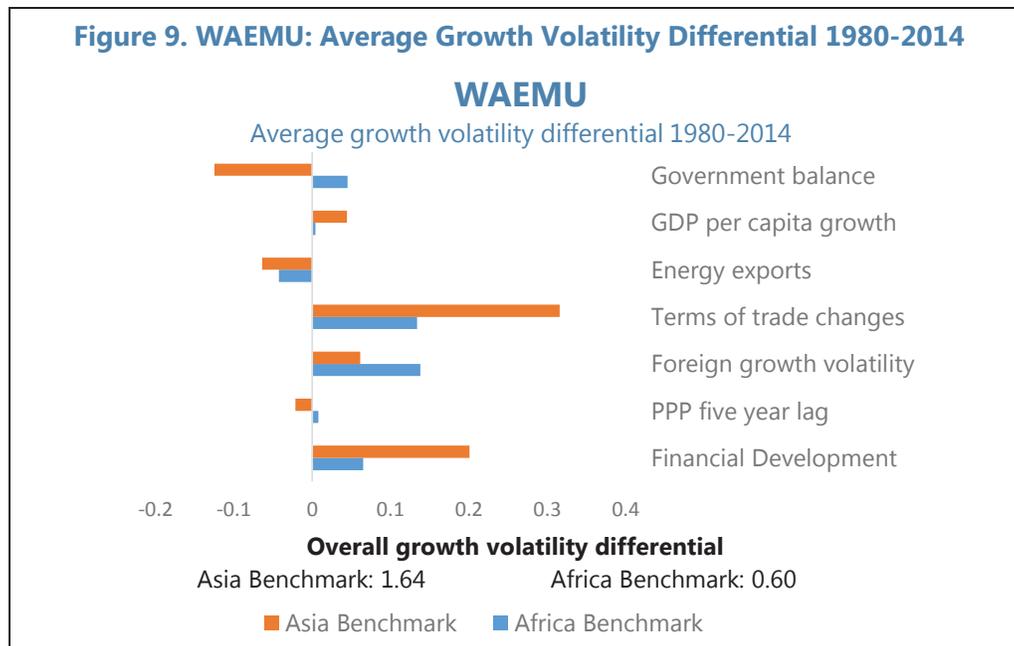
11.   This section tries to assess how further financial development could contribute to reduce the volatility of growth in the WAEMU. Building on Sahay and others (2015), we regress rolling standard deviations of growth (five-year period ending in current year) on the financial development index and a set of controls—initial GDP per capita (PPP), trade and financial openness, energy exports in percent of GDP, the volatility of foreign growth, gross capital inflows to the region excluding the country in question, terms of trade changes, the polity index, transition and offshore center dummies, growth of GDP per capita and the government balance. Table 1 highlights the results of this regression for three sets of regressions: (i) including the composite measure of financial development, (ii) decomposing the measure into financial institutions and financial markets, and (iii) further decomposing these two dimensions into depth, access and efficiency. The results suggest that higher financial development is associated with lower volatility of growth and the relationship is weakening at higher levels of financial development.
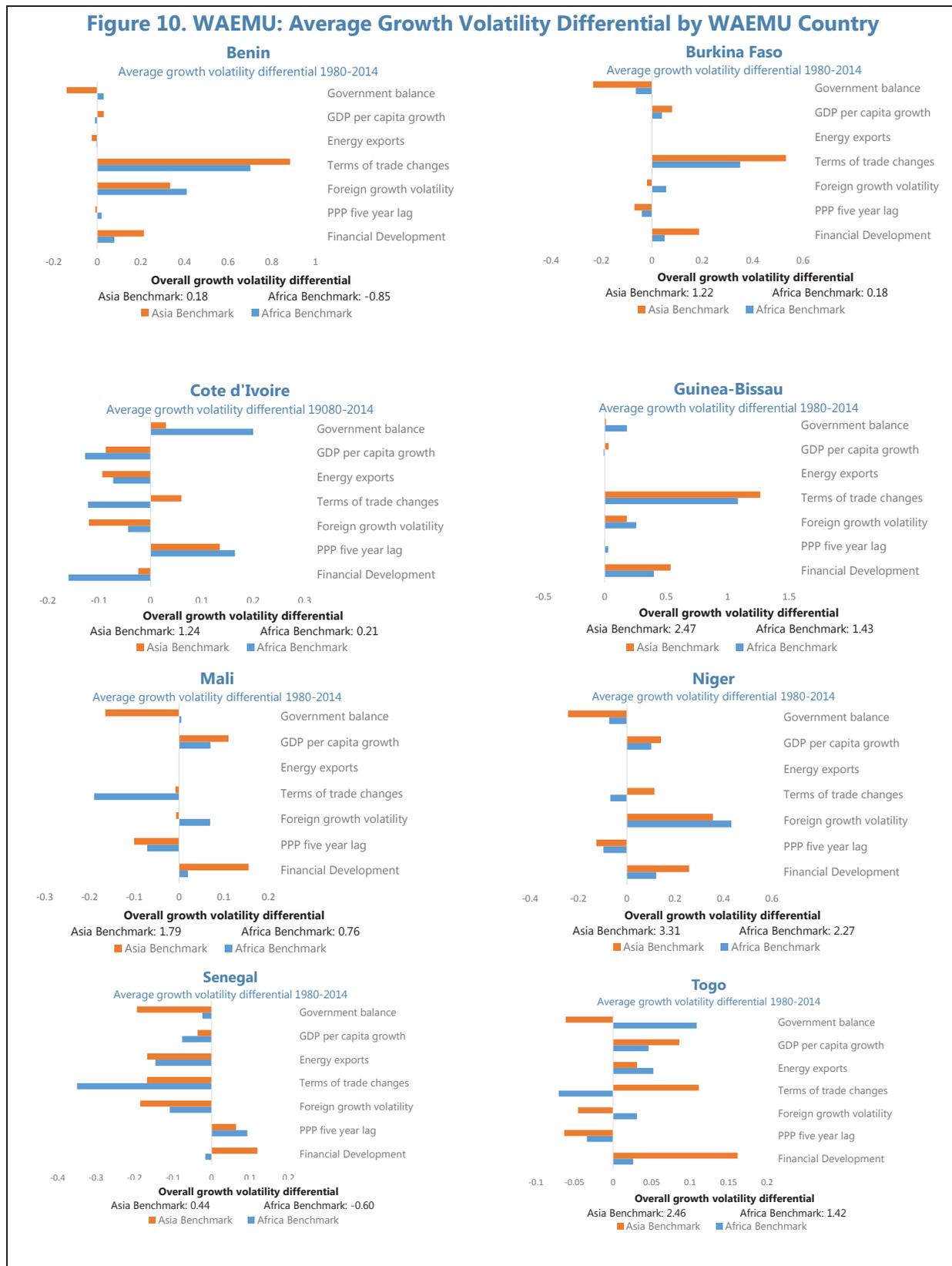
	Table 1. WAEMU: Explaining the Volatility of Growth		
	General Index - FD	FD Sub-components	FI and FM Sub-components
Financial Development Index	-4.65***		
Financial Development Index ^{2}	3.35*		
Financial Institutions		-1.000	
Financial Institutions ^{2}		-0.44	
Financial Markets		-4.39***	
Financial Markets ^{2}		4.73***	
Financial Institutions Access			-2.14**
Financial Institutions Access ^{2}			1.51*
Financial Institutions Depth			-2.22
Financial Institutions Depth ^{2}			2.02
Financial Institutions Efficiency			-2.81*
Financial Institutions Efficiency ^{2}			3.96**
Financial Markets Access			-1.87
Financial Markets Access ^{2}			1.83
Financial Markets Depth			-1.21
Financial Markets Depth ^{2}			-0.04
Financial Markets Efficiency			-1.31
Financial Markets Efficiency ^{2}			1.72
GDP per Capita PPP 5-year Lag	0.00***	0.00***	0.00***
Trade Openness 5-year Lag	0.000	0.000	0.000
Financial Openess 5-year Lag	0.01	0.01	0.01
Energy Exports (% of GDP) 5-year Lag	0.09*	0.09*	0.10*
Volatility of foreign growth	0.43***	0.43***	0.44***
Gross Capital Inflows	0.01	0.02	0.03
Terms of Trade Changes	0.04***	0.04***	0.04***
Polity Index	0.01	0.01	0.03
Energy Exports (% of GDP) 5-year Lag	1.2	1.100	0.85
GDP per Capital PPP Growth	0.00***	0.00***	0.00***
Government Balance	-0.11***	-0.11***	-0.10***
Constant	1.98***	1.93***	1.97***
Observations	2312	2312	2312
Number of Countries	103	103	103
R^2	0.12	0.12	0.12

12. **A decomposition exercise shows that the volatility of growth could have been lower if financial development in the WAEMU was at benchmark levels.** Figure 9 highlights the contribution of financial development, together with other indicators which were significantly associated with the volatility of growth in Table 1. It shows that, on average, lower financial development could account for about 10 percent of the volatility differential with the groups of Asian and African benchmark countries.

13. **The magnitudes of the effect of financial development on volatility vary by WAEMU country** (Figure 10). As highlighted in the previous section the level of financial development varies markedly across WAEMU countries, with highest levels observed In Cote d'Ivoire, and the lowest in Guinea-Bissau. At the same time, there have been also large differences in the volatility of growth across WAEMU countries, with Benin having experienced an on average lower volatility of growth than the African Benchmark groups, while the volatility differential to benchmark groups has been highest in Guinea-Bissau. The results from the volatility decomposition suggest that financial development can explain about one sixth and one fourth of the growth volatility differential between Guinea-Bissau and the group of Asian and African benchmark countries, respectively, while the effects are smaller for other WAEMU countries.

Figure 9. WAEMU: Average Growth Volatility Differential 1980-2014

WAEMU
Average growth volatility differential 1980-2014

Government balance
GDP per capita growth
Energy exports
Terms of trade changes
Foreign growth volatility
PPP five year lag
Financial Development

-0.2   -0.1   0   0.1   0.2   0.3   0.4

Overall growth volatility differential
Asia Benchmark: 1.64   Africa Benchmark: 0.60

■ Asia Benchmark   ■ Africa Benchmark

Figure 10. WAEMU: Average Growth Volatility Differential by WAEMU Country

References

Newiak, M., and R. Awad, 2015, "Financial Inclusion in the WAEMU" – West African Economic and Monetary Union, Selected Issues Paper.

Sahay, R., M. Cihak, P. N'Diaye, A. Barajas, R. Bi, D. Ayala, Y. Gao, A. Kyobe, L. Nguyen, C. Saborowski, K. Svirydzenka, and S. R. Yousefi, 2015,. "Rethinking Financial Deepening: Stability and Growth in Emerging Markets" Staff Discussion Note 15/08, (Washington: International Monetary Fund).

Svirydzenka, K., 2016, "Introducing a New Broad-based Indicator of Financial Development," IMF Working Paper, WP/16/5, (Washington: International Monetary Fund).

BCEAO, Monthly Bulletin of Monetary and Financial Statistics, August 2015.

BCEAO, 2014 Annual Report, August 2015.

WAMU Banking Commission, 2013 Annual Report, September 2014.

BCEAO, Note on the Situation of Microfinance, October 2015.

INCOME INEQUALITY, GENDER INEQUALITY, AND GROWTH IN THE WAEMU[1]

This paper examines the state of inclusion in the WAEMU along three dimensions: poverty, income inequality, and gender inequality. It shows that, while WAEMU countries have made progress along these dimensions, this progress was generally slower than in a group of African and Asian benchmark countries which have experienced much faster real GDP per capita growth than the region in the last decades. The paper finds that, while infrastructure scaling up, increasing human capital investment and building institutions remain priorities for WAEMU countries, these policies should be complemented in particular by efforts to close gender gaps in opportunities, such as in education and health, and granting the same legal right to women as for men. Improving these indicators to levels of Asian benchmark groups could boost annual real GDP per capita growth by on average 1 percentage point. This effect supplements the large and positive effect of more equal opportunities on growth through overall education levels and income inequality.
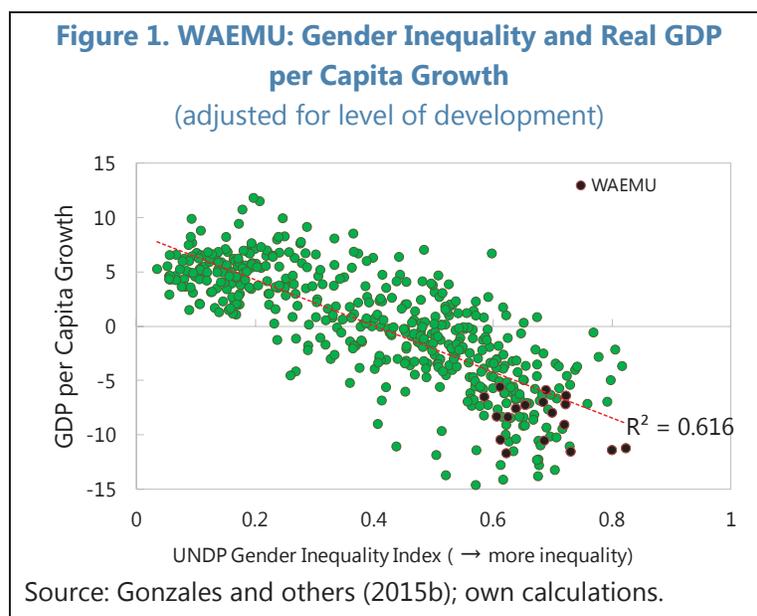
A.   Introduction

1.   **There is robust evidence that higher income inequality can impede growth.** Lower net income inequality has been associated with faster and more sustained economic growth in both advanced and developing countries (Berg and Ostry 2011; Ostry and others 2014). With imperfect credit markets, income inequality prevents an efficient allocation of resources by decreasing poorer households' ability to make investments into human and physical capital (Galor and Zeira 1993; Corak 2013). Higher income and wealth inequality can also lead to socio-political instability and poor governance, thus discouraging investment (Bardhan 2005).

2.   **The evidence that gender inequality is impeding economic growth is also growing** (Figure 1). Gender inequality has been associated with worse growth and development outcomes (WEF 2014; Elborgh-Woytek and others 2013; IMF 2015, Gonzales and others 2015b). Gender gaps in economic participation restrict the pool of talent in the labor market and can yield a less efficient allocation of resources (Cuberes and Teigner 2015), lower productivity (Loko and Diouf 2009) and hence lower GDP growth. Since women are more likely than men to invest a large proportion of their household income in the education of their children, higher economic participation levels and earnings by women translate into higher expenditure on school enrollment for children (Duflo 2012; Heintz 2006; Miller 2008, Rubalcava and others 2004; Thomas 1990). IMF (2015) highlights reductions in gender inequality as one of the most promising avenues to boost growth in the region – together with closing gaps in infrastructure and education. It shows that decreasing income and gender inequality in sub-Saharan African countries to levels observed in the ASEAN 5 (Indonesia,

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[1] Prepared by Stefan Klos and Monique Newiak

Malaysia, the Philippines, Thailand and Vietnam) could increase real GDP per capita growth by about 1 percentage point on average.

Figure 1. WAEMU: Gender Inequality and Real GDP per Capita Growth
(adjusted for level of development)

Source: Gonzales and others (2015b); own calculations.

3.   **This paper examines to what extent income and gender inequality have contributed to the WAEMU's growth shortfall compared to other regions.** It proceeds as follows: First, we benchmark poverty, income inequality and gender inequality measures against two groups of countries which had similar GDP per capita levels two decades ago, but since then have experienced significantly higher growth levels than the WAEMU. Staying consistent with the previous Article IV consultation, the group of African benchmark countries includes Ghana, Kenya, Lesotho, Rwanda, Tanzania, Uganda, and Zambia. The group of Asian benchmark countries includes Bangladesh, Cambodia, India, Laos, Nepal, and Vietnam. Respectively, these two groups have experienced around 2½ and 3½ percentage points higher real GDP growth compared to the WAEMU in the last decade. Secondly, this note quantifies to what extent higher income inequality and gender inequality have contributed to the growth differential between the WAEMU and these groups. To highlight the upside potential of gender and distribution-friendly policies, we additionally use a group of the five fast-growing ASEAN countries—Indonesia, Malaysia, Philippines, Thailand, and Vietnam—as a more ambitious benchmark. Finally, policy recommendations and conclusions highlight possible areas for action.

B. Stylized Facts

4.   **Poverty rates have declined in the majority of WAEMU countries but remain higher compared to benchmark countries** (Figure 2). The majority of WAEMU countries have succeeded in decreasing extreme poverty rates, the ratio of the population living on less than US$ 1.90 (2011 PPP), often from very high levels. For example, in Burkina Faso, latest poverty statistics indicated that extreme poverty has declined by almost 28 percentage points compared to

the early 1990s. However, more than half of the population continues to live below the US$ 1.90 per day threshold, and about four-fifths of the population lives below US$ 3.10 per day. The picture is similar for Mali, Niger, and Senegal where extreme poverty rates have declined by more than 25 percentage points, but more than two-thirds of the population continues to live on less than US$ 3.10 per day. In countries in which poverty rates have declined only slightly, as in Togo, however, the absolute number of people living in poverty has increased as the population has grown. In some countries, poverty rates have increased, likely also related to episodes of political instability, such as in the cases of Guinea-Bissau (increase of extreme poverty rate by about 24 percentage points) and Cote d'Ivoire (increase in about 7½ percentage points). On average, poverty rates remain higher than in African benchmark countries, and much higher than in Asian benchmark countries in which, while starting at poverty levels similar to those in the WAEMU two decades ago, the period of high growth has coincided with a reduction in poverty rates by on average more than 30 percentage points.

5.   **The picture with respect to income inequality trends is mixed.** Figure 2 also highlights the trends in income inequality in the WAEMU and other countries. It shows that income inequality as measured by the net gini coefficient (100 means perfect inequality, and 0 means perfect equality) has declined in several countries (Burkina Faso, Guinea-Bissau, Mali, Niger, Senegal). However, the gini coefficient has increased in Cote d'Ivoire, and in Guinea-Bissau the decline has likely resulted from an increase in poverty rates (decrease in income for some parts of the population decreasing the gini coefficient). The top 10 percent earners' incomes makes up for one-fourth to 35 percent of total income across WAEMU countries, while the top 20 percent earn from two-fifths to over one half of total income. In contrast, the bottom 10 percent only earn 2 to 4 percent of total income.

Figure 2. WAEMU: Trends in Poverty and Inequality

*Extreme Poverty has declined in most WAEMU countries, but remains above Asian and African benchmarks...*

Poverty headcount ratio at $1.90 a day (2011 PPP), 1990-2012
(in Percent of Total Population)
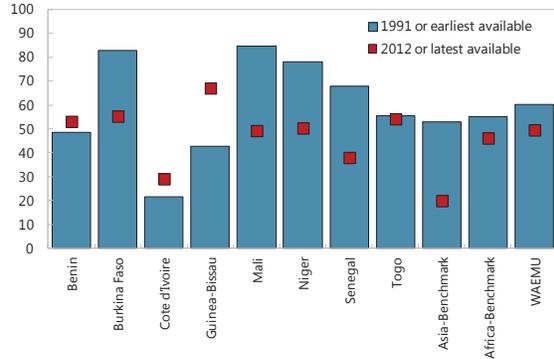
Sources: World Bank, Word Development Indicators, 2015

*...with a similar pattern for the ratio of the population living for less than US$ 3.10 (PPP) a day.*

Poverty headcount ratio at $3.10 a day (2011 PPP), 1990-2012
(in Percent of Total Population)
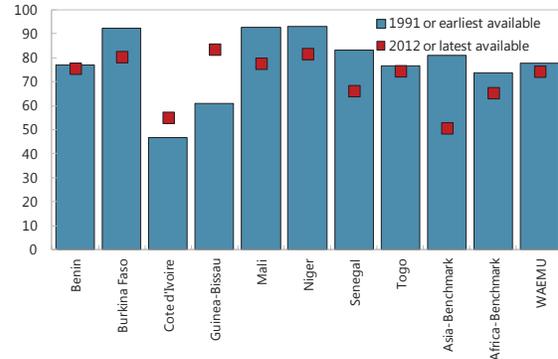
Sources: World Bank, Word Development Indicators, 2015

Net income inequality appears to have also declined in most cases...
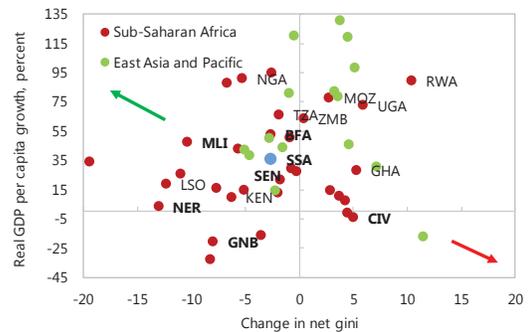
GINI Coefficient of Inequality
(Higher values reflect more inequality)
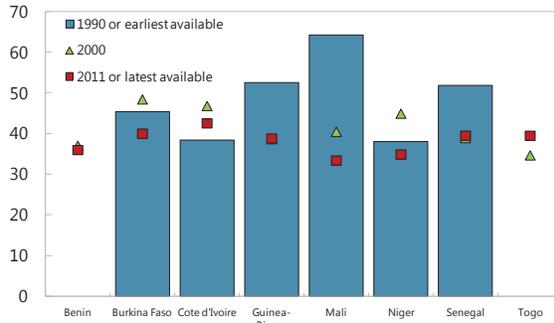
Sources: Source: Solt, Frederick. 2014. "The Standardized World Income Inequality Database." Working paper. SWIID Version 5.0, October 2014

Reductions in the gini coefficient have not always coincided with increases in GDP per capita.

Change in Gini Coefficient and Real GDP per Capita, 1995–2011

Sources: World Bank, *WDI*; and Solt, Frederick. 2014. "The Standardized World Income Inequality Database." Working paper. SWIID Version 5.0, October 2014.
Note: Change between 1995 (or earliest available year) and 2011 (or latest avaible).

The 10 percent of people at the bottom of the income distribution earn only 2 to 4 percent of tital income...

Income Share by of Top and Bottom of the Income Distribution, 2012 or latest available
(In Percent)
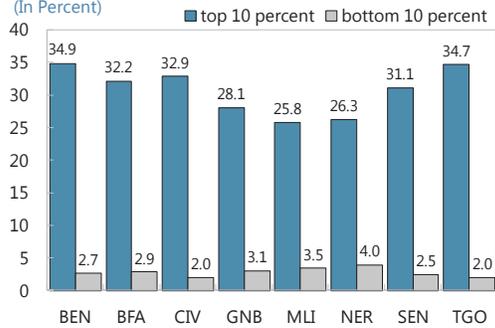
Sources: World Bank, World Development Indicators

...while the 20 percent with highest incomes earn more than half of total income in some countries.
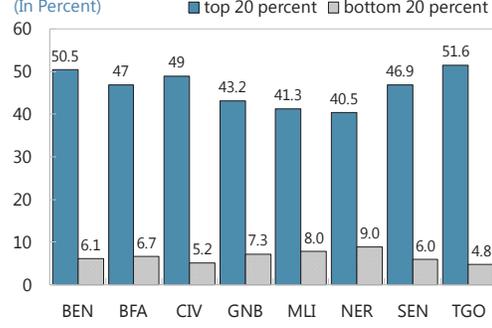
Income Share by of Top and Bottom of the Income Distribution, 2012 or latest available
(In Percent)

Sources: World Bank, World Development Indicators

6.   Gender inequality in the WAEMU stands out as one of the highest in the world and has declined more slowly than in benchmark countries (Figure 3). The United Nations gender inequality index measures gender inequality of outcomes (the gap between female and male labor force participation rates and the share of women's seats in parliament) as well as inequality of opportunity (gender gaps in education and indicators of female health, such as the maternal death ratio and adolescent fertility). It shows that, when aggregating these categories, the WAEMU performs worse than most of the countries in the world. In contrast to the two groups of fast growing benchmark countries, the gender inequality index in the WAEMU is much higher, and has declined more slowly.

7.   This is particularly worrisome since at the global level, countries with high gender inequality have a less equal income distribution, are poorer and grow more slowly (Figure 3, charts, 2 to 4). The following paragraphs highlight the developments in the gender inequality index' main components.
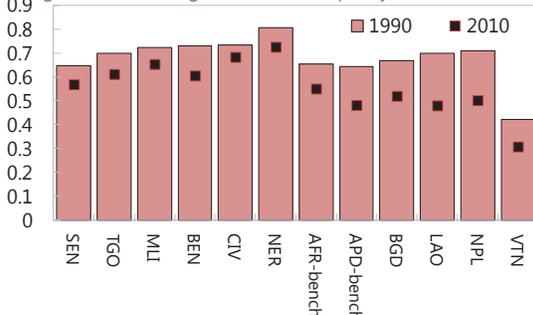
Figure 3. WAEMU: Gender Inequality

Gender of outcomes and opportunities has declined more slowly compared to benchmark countries, and remain high,

...indeed amongst the highest in the world. Gender inequality is associated with higher income inequality...
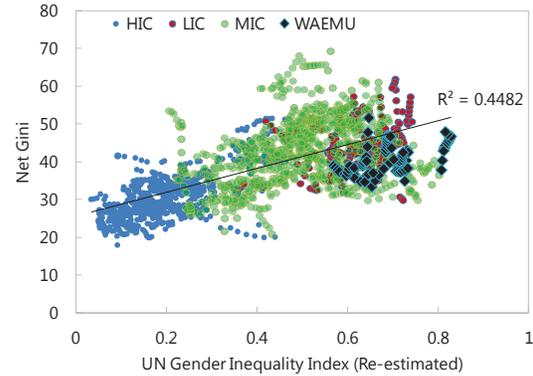
Gender Inequality Index
(Higher Values = Higher Gender Inequality)

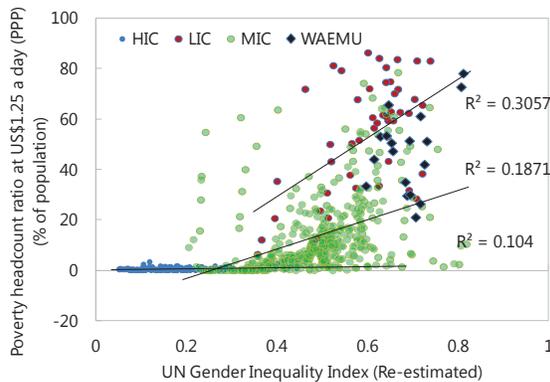Sources: United Nations and Gonzales and others (2015b)

Income Inequality and Gender Inequality

$R^2 = 0.4482$

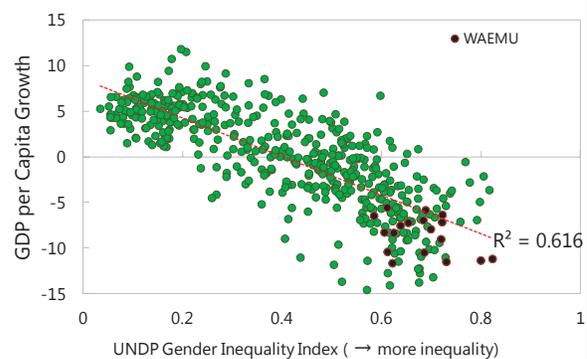Sources: SWIID, United Nations, and own estimates.

...higher poverty levels,...

...and lower growth.

Poverty (US$ 1.25) and Gender Inequality

$R^2 = 0.3057$

$R^2 = 0.1871$

$R^2 = 0.104$

Sources: World Bank World Development Indicators, United Nations and own estimates.

Gender Inequality and Real GDP per Capita Growth

$R^2 = 0.616$

8. **Labor force participation rates have increased on average but remain very low in several of the region's countries** (Figure 4). The gender gap in labor force participation, the difference between men's and women's labor force participation rates, has declined significantly in the region over the last two decades from more than 30 percentage points in 1990 to around 20 percentage point in 2013. This reduction was mostly driven by large reductions in these gaps in Benin, Cote d'Ivoire and Niger, with the latter two having started from very high levels. However, the gap remains higher than in the fast growing Asian Benchmark group where the average gap is less than 17 percentage points, and substantially higher than the African benchmark group's gap of only around 6 percentage points. Female labor force participation is very low in some of the WAEMU countries even at very low levels of per capita incomes (Mali, Niger). At these levels of income, countries usually observe higher labor force participation rates by women as they need to work for

subsistence. When they do participate in the labor market in Mali and Cote d'Ivoire, women are more likely than men to work in the informal sector.

9.   WAEMU countries are also outperformed by benchmark countries in educational equality between boys and girls as well as in health indicators (Figure 5). Adult literacy rates are generally lower in most WAEMU countries as compared to benchmark groups, but they remain particularly low for women. Gender gaps in primary education have shrunk but are not closed in the majority of WAEMU countries. In Benin, Cote d'Ivoire, Mali, and Niger less than 9 girls are enrolled in primary education for every 10 boys, implying that these country lag behind the millennium development goal that girls and boys alike can complete a full course of primary schooling in 2015. Only 7 girls are in secondary education for each 10 boys, and women are less than 50 percent as likely to be enrolled in tertiary education. Health indicators remain poor in several WAEMU countries: The risk of maternal death is much higher in WAEMU countries, especially in Mali and Niger, as compared to the benchmark groups, so are adolescent fertility rates.

Figure 4. WAEMU: Gender Gaps in Labor Force Participation

The gender gap in labor force participation has declined substantially over the last decades, but remains comparatively high.
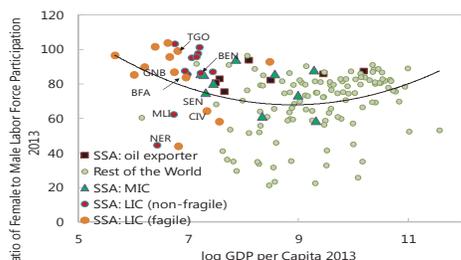
Labor Force Participation Gaps, 1990-2013
(Male minus Female Labor Force Participation Rates, in Percent)

The gap remains particularly high in Niger, Cote d'Ivoire, and Mali.

Labor Force Participation Gaps, 1990-2013
(Male minus Female Labor Force Participation Rates, in Percent)

Sources: World Bank, Word Development Indicators, 2015, ILO KILM
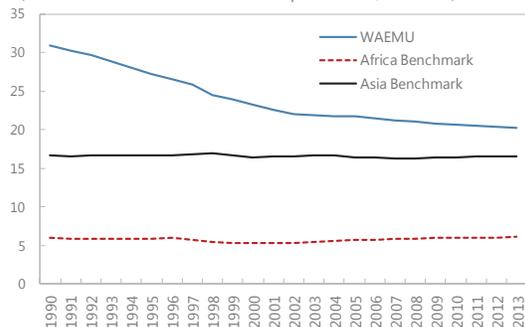
In these three countries, female participation rates are significantly below the ones implied by the countries' level of development.

Female Labor Force Participation and Development

Sources: World Bank World Development Indicators; IMF World Economic Outlook, October 2015 Regional Economic Outlook: Sub-Saharan Africa.(IMF 2015).

If in the labor market in Mali and Cote d'Ivoire, women are more likely to be in the informal sector.

Persons Employed in the Informal Sector
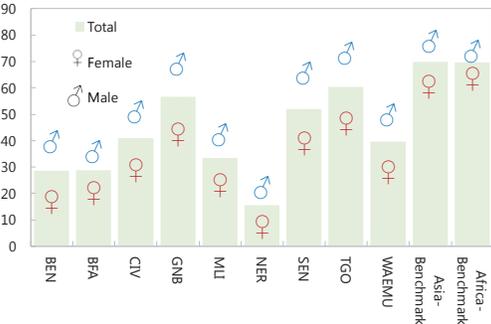(in Percent of Non-Agricultural Employment)*
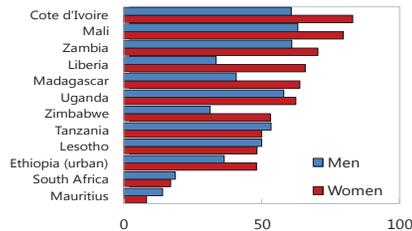
*2010 or latest available. Source: ILO and Women in Informal Employment: Globalizing and Organizing (WIEGO)

Figure 5. WAEMU: Gender Inequality in the WAEMU

Gender gaps in literacy rates remain high compared to other regions...

Adult Literacy Rates, 2012 or Latest Available
(In Percent of Population)

Sources: UNESCO Institute for Statistics

...while primary enrollment gaps have almost closed, they are still wider than in benchmark regions.

Ratio of female to male primary enrollment, 1990-2013
(in Percent)
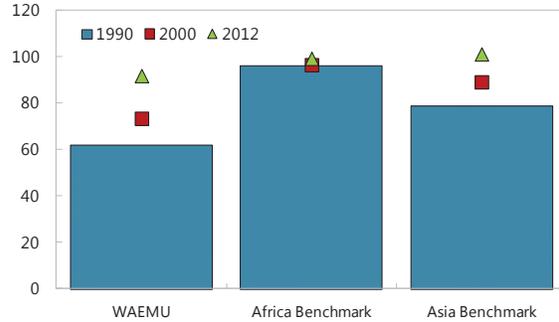
Sources: World Bank, Word Development Indicators, 2015

...and, with only 7 girls enrolled for each boy, the gender gap is significantly wider for secondary education.

Ratio of female to male secondary enrollment, 1990-2013
(in Percent)
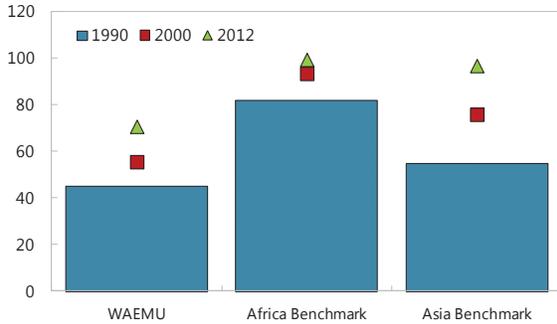
Sources: World Bank, Word Development Indicators, 2015

Men are more than twice more likely to be enrolled in tertiary education than women.

Ratio of female to male tertiary enrollment, 1990-2013
(in Percent)
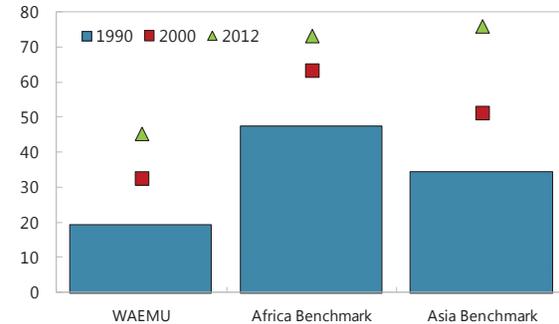
Sources: World Bank, Word Development Indicators, 2015

Health indicators remain poor, especially in Mali and Niger.

Lifetime Risk of Maternal Death
(In Percent)
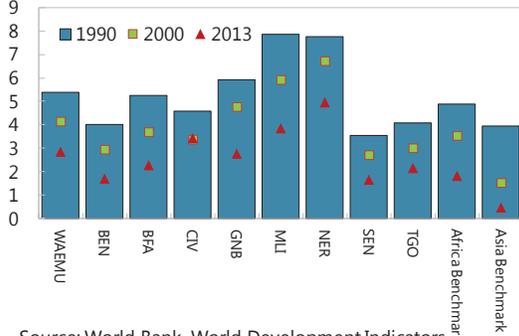
Source: World Bank, World Development Indicators.

Adolescent fertilitly raes have declined but remain relatively high.

Adolescent Fertility Rate
(Number of Birth per Women Age 15-19)
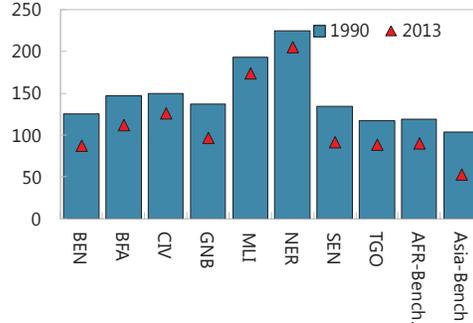
Source: World Bank, World Development Indicators.

10. **Finally, women face a number of legal restrictions in the region**. There are several laws on the book in WAEMU countries' which impose gender inequalities. Legal inequities between men and women have been shown to put a heavy toll on women's labor force participation, and thus growth (Gonzales and others, 2015a). According to World Bank (2015), in at least half of the WAEMU's countries women cannot be the head of a household the same way as men, and in none of the WAEMU countries does there exist legislation which prohibits discrimination in access to credit based on gender. In Niger, where female labor force participation is particularly low, there are restrictions on women getting a job the same way as men. In Cote d'Ivoire and Senegal, there are differences in property rights between men and women. In at least half of the countries, women are not protected legally from domestic violence.

C. Growth Effects of Gender and Income Inequality

11. **Given that income inequality in the region is a concern, and that gender inequality is among the highest in the world, this section tries to answer whether these inequalities had an impact on economic performance in the region.** We follow the approach taken in IMF (2015) to decompose the differences in average real GDP per capita growth rates in the WAEMU and two benchmarks: a group of African benchmark countries (Ghana, Kenya, Lesotho, Rwanda, Tanzania, Uganda, Zambia) and a group of Asian benchmark countries (Bangladesh, Cambodia, India, Laos, Nepal, and Vietnam) which have experienced around 2½ and 3½ percentage points higher real GDP growth compared to the WAEMU in the last decade.

12. **We find that the WAEMU's real GDP per capita growth could significantly benefit from realistically implementable decreases in gender and income inequality** (Figure 6). The results of this approach reveal, that, in addition to large effects on growth from overall educational

and infrastructure gaps, income and gender inequality can explain around 0.5 percentage points of the WAEMU's real GDP per capita income shortfall compared to the Asian Benchmark group. The effect for a reduction of gender inequality and legal inequality to the level observed in the five fast- growing ASEAN countries (Indonesia, Malaysia, Philippines, Thailand, and Vietnam) alone could boost real GDP per capita rates by 1 percentage point.

Explaining the WAEMU's Growth Differential to Benchmark Countries
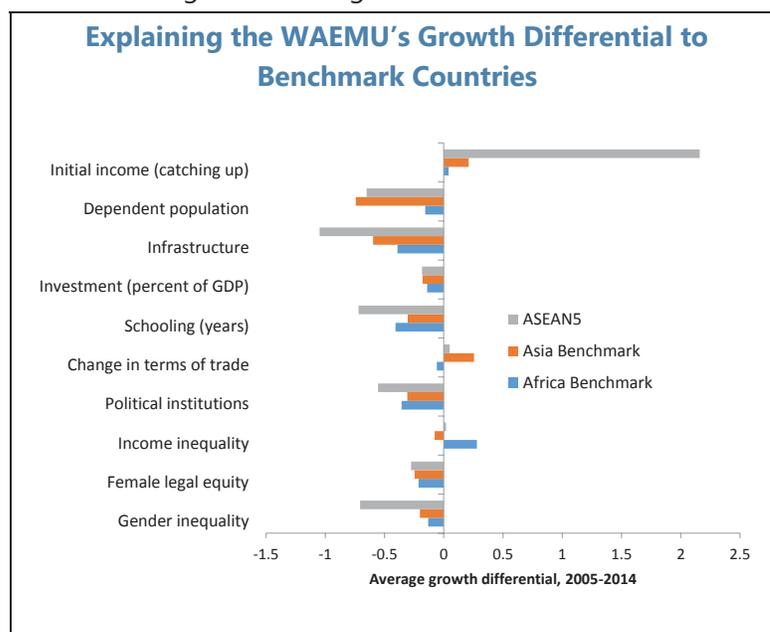
13. **The magnitudes of these effects vary across WAEMU countries** (Figure 7). While income and gender inequality have on average significantly contributed to the growth short fall of the WAEMU relative to benchmark groups, the magnitudes of the effect

vary. For instance, in Burkina Faso, income and gender inequality have been lower than in benchmark groups which has positively affected growth in Burkina Faso vis-à-vis the benchmarks. In Mali and Niger, with a high share of the population living in poverty, income inequality is relatively low. However, gender inequality is high in absolute and relative terms in Niger and Mali. In particular, in Mali, a reduction of gender inequality and an increase of legal equality between men and women to the levels observed in the ASEAN-5 alone could have resulted in a boost of the real GDP per capita growth rate of 1¼ percentage points of GDP.

14.   The regressions confirm existing policy priorities. The results highlight that decreasing income inequality and gender inequality may not only be desirable from a political preference or human rights perspective but that they could bring significant macroeconomic benefits, since the associated gains in real GPD per capita growth are large for policy moves which are realistically implementable in shorter time horizons. In addition the decomposition exercise confirms that earlier policy priorities, such as boosting the regions infrastructure, increase the level of schooling (including through more education for girls) and improving the institutional environment could be associated with stronger growth in the region.

Figure 6. Differential Effects of Closing the Gap in Income and Gender Inequality in the WAEMU to Benchmark countries
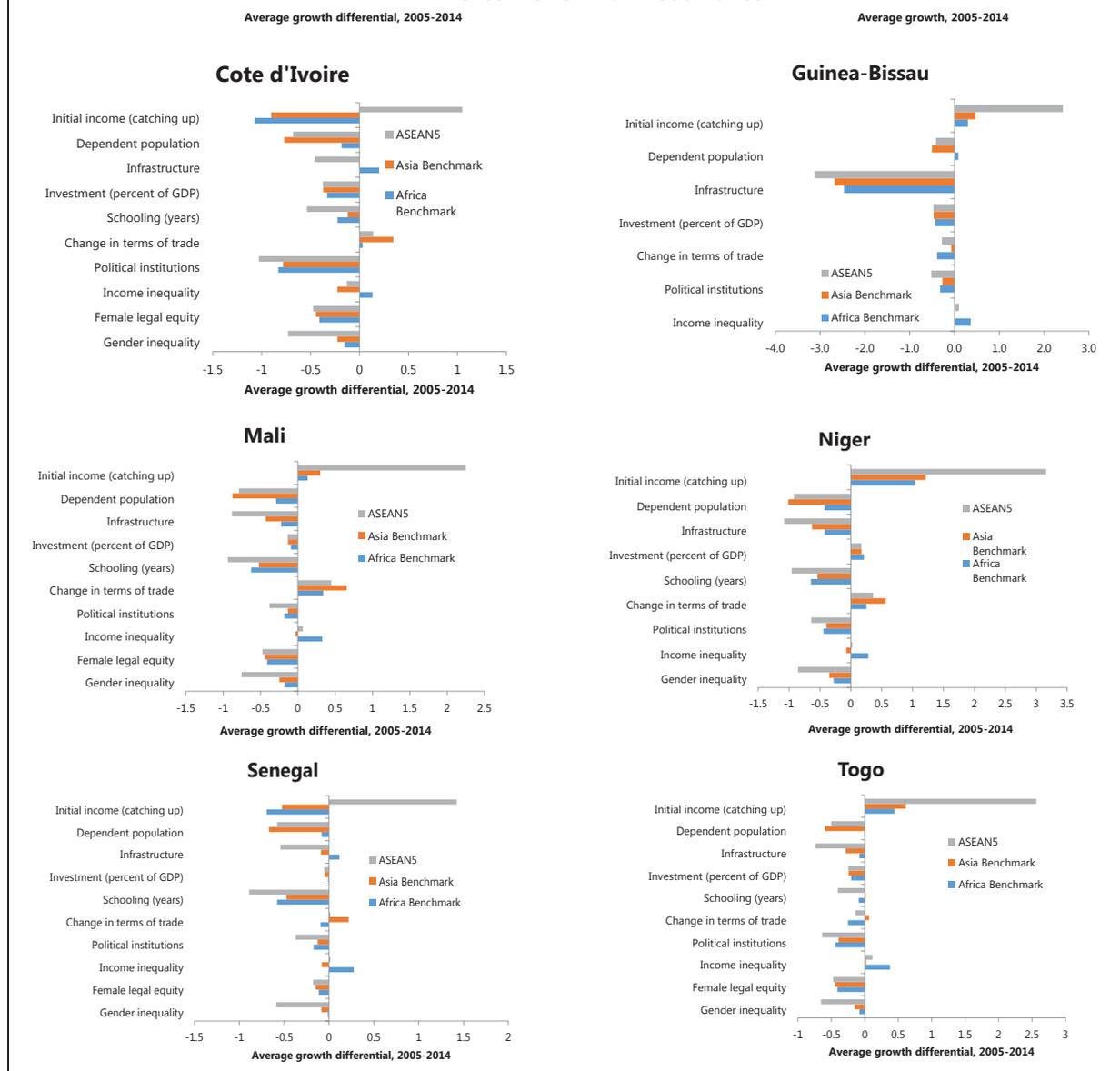
D. Conclusions and Policy Recommendations

15.   This paper has shown that both lower income inequality and lower gender inequality could boost real GDP per capita growth in the WAEMU, in addition to previously identified policies. The results emphasize that gender inequality of outcomes and opportunities is very high, and policies to mitigate these inequality are particularly promising. In particular, closing gender gaps in education would not only stimulate growth from a more efficient allocation of resources, it would in addition increase total education in the region, thus boosting growth further. Lower gender inequality has also been associated with a more equal income distribution (Gonzales and other 2015b) which in turn is also associated with higher growth (Dabla-Norris and others 2015 and Berg

and Ostry 2011). This note confirms previous findings that the region could benefit from boosting infrastructure and human capital and strengthening of institutions.

16.   The following policies could help reduce income inequality and gender inequality (Gonzales and other 2015a, Gonzales and others 2015b, IMF 2015, Elborgh-Woytek and others 2013; World Bank 2012):

- *Remove legal inequalities between men and women*. For example, Namibia equalized property rights for married women and granted women the right to sign a contract, head a household, pursue a profession, open a bank account, and initiate legal proceedings without the husband's permission in 1996. In the decade that followed, Namibia experienced a 10 percentage point increase in its female labor force participation rate. Lower gender gaps in female labor force participation, in turn, have also been associated with lower income inequality.

- *Foster education*. This could not only increase productivity through a more efficient allocation of resources but in addition boost overall education levels, a pre-requisite for sustained growth.

- *Boost infrastructure, including through improving access to water and increased electrification of the region*. This could not only boost growth directly but in addition free women's time to go to school and join the labor market since girls and women are most cases the main providers of household work.

- *Reduce the regressivity of fiscal spending and taxes*. In particular, replace across-the-board subsidies with well-target social transfer schemes.

- *Foster financial inclusion, including for women* (see SIP on financial inclusion and stability).

17.   In promoting policies to reduce gender and income inequality, this paper does note pose any normative judgment on countries social and religious norms but argues for a level playing field, for all agents in the economy being able to explore their economic potential – if they so choose.

References

Bardhan, P. K. 2005. Scarcity, Conflicts, and Cooperation: Essays in the Political and Institutional Economics of Development. Cambridge, Massachusetts: MIT Press.

Berg, Andrew, Jonathon D. Ostry, and Jeromin Zettelmayer. 2012. "What Makes Growth Sustained?" Journal of Development Economics, (98) 149–66.

Corak, M. 2013. "Income Inequality, Equality of Opportunity, and Intergenerational Mobility." Journal of Economic Perspectives 27(3): 79–102.

Cuberes, D., and M. Teigner. 2015. "Aggregate Effects of Gender Gaps in the Labor Market: A Quantitative Estimate.

Duflo, E. 2012. "Women Empowerment and Economic Development." *Journal of Economic Literature* 50 (4): 1051–079.

Elborgh-Woytek, K., M. Newiak, K. Kochhar, S. Fabrizio, K. Kpodar, P. Wingender, B. Clements, and G. Schwartz. 2013. "Women, Work, and the Economy: Macroeconomic Gains from Gender Equity. Washington, DC : IMF, 2013. Staff Discussion Note, SDN/13/10.

Galor, O., and J. Zeira. 1993. "Income Distribution and Macroeconomics." *The Review of Economic Studies* 60 (1): 35–52.

Gonzales, C., S. Jain-Chandra, K. Kochhar, and M. Newiak. 2015a. "Fair Play: More Equal Laws Boost Female Labor Force Participation." Washington, DC : IMF, 2015. Staff Discussion Note, SDN/15/02.

Gonzales, C., S. Jain-Chandra, K. Kochhar, and M. Newiak, M., and T. Zeinullayev. 2015b. "Catalyst for Change: Empowering Women and Tackling Income Inequality." Washington, DC: IMF, 2015. Staff Discussion Note 15/20.

Heintz, J., 2006, "Globalization, Economic Policy and Employment: Poverty and Gender Implications," International Labour Organization, Geneva.

IMF. 2015. "Inequality and Economic Outcomes in Sub-Saharan Africa." October 2015 Regional Economic Outlook: Sub-Saharan Africa.

Loko, B., and Mame A. Diouf. 2009. "Revisiting the Determinants of Productivity Growth: What's New?" IMF Working Paper 09/225, International Monetary Fund, Washington.

Ostry, J., A. Berg, and C. Tsangarides. 2014. "Redistribution, Inequality, and Growth." IMF Staff Discussion Note 14/02, International Monetary Fund, Washington.

Rubalcava, L., G. Teruel, and D. Thomas, 2004, "Spending, Saving and Public Transfers to Women," California Center of Population Research UCLA, On-Line Working Paper Series, CCPR-024-04.

Thomas, D., 1990, "Intra-Household Resource Allocation. An Inferential Approach," The Journal of Human Resources, Vol. 25, No. 4, 635-664.

World Economic Forum (WEF). 2014. *The Global Gender Gap Report 2014.* Basel: WEF.

World Bank 2012: World Development Report-Gender.

World Bank. 2015. Women, Business and the Law. Washington DC: The World Bank.

ASSESSING RISKS FOR WAEMU ECONOMIC OUTLOOK[1]

We estimate the possible impacts of some domestic and external downside risks on the WAEMU outlook. We simulate the impact of (i) country-specific delays in structural reforms and (ii) tighter or more volatile global conditions which would result in higher financing costs for governments and (iii) we model the impact of a growth slowdown in key advanced economies, China, and Nigeria. Results show that the materialization of these risks would reduce real aggregate WAEMU GDP growth by up to 1.5 percentage points through different channels.

A. Risks to the Outlook

1.   Risks to the regional outlook are skewed to the downside. As shown in the 2016 WAEMU Staff Report on Common Policies of Member Countries, the outlook for the region is positive but with downside risks. On the domestic side, delays in implementing structural reform may lower regional growth prospects. The positive outlook of the baseline scenario assumes, indeed**,** timely and effective implementation of several domestic reforms such as (i) enhancing the efficiency of spending and improving the quality of public investment; (ii) creating additional fiscal space to meet development needs while safeguarding macroeconomic stability and debt sustainability; (iii) increasing financial access and inclusion while preserving financial stability; and (iv) boosting competitiveness and diversification, improving the business environment and enhancing inclusion. On the external side, the growth slowdown in China or tighter or more volatile global conditions would also affect WAEMU members. While regional exposure to global financial markets remains limited, increased financing costs could influence the region through higher regional risks premia and availability of external and regional financing. A sharper-than-expected slowdown in China would directly affect regional exports and investment, flows. WAEMU countries could also be affected by cross-border spillovers from the Euro area and other emerging market partners.

B. Impact of the Realization of Domestic Risks

2.   Country-specific simulations indicate that delays in structural reforms would lower WAEMU economic growth by 1–1.5 percentage points compared to the baseline scenario. The domestic risk scenario assumes a delay in key reforms at each individual country level (and at the regional) level. These reforms can be related to fiscal consolidation, improvement in public finance management, infrastructure investment, the energy sector, the financial sector, or business climate. As these reforms are already—to the certain point—integrated in the countries' baseline projections, their delay has an immediate impact on the consolidated WAEMU economic performance. Assuming inertia in structural reforms, domestic investment growth would be lower by about 2.5–3 percentage points compared to the baseline, reflecting mainly a significant reduction in private investment due to a less favorable business climate than assumed in the baseline scenario (Figure 1). Domestic

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[1] Prepared by Boriana Yontcheva, Stefan Klos, and Aleksandra Zdzienicka with inputs from WAEMU teams.

consumption growth is projected to be lower by about 1.2 percentage points compared to the baseline (Figure 1A). Lower domestic demand is expected to immediately reduce imports while export growth would decline more gradually reflecting lower competitiveness of the region. The current account balance (excluding grants) is projected to improve by about 0.5 percentage point of GDP, on average. The overall fiscal balance (excluding grants) is expected to improve by about 0.6 and 0.2 percentage point of GDP in 2016 and 2017, respectively, due to lower public investment. However, with falling fiscal revenue, the overall fiscal balance would deteriorate by about 0.1 percentage point of GDP over the medium term (Figure 1B). Delays in structural reforms would put strains on external financing; lowering substantially current transfers and official loans up to about one percentage point of GDP in favor of more short-term portfolio inflows. This scenario would result in a small cumulative reduction in WAEMU official reserves of about US$ 0.2 billion (Figure 1D).
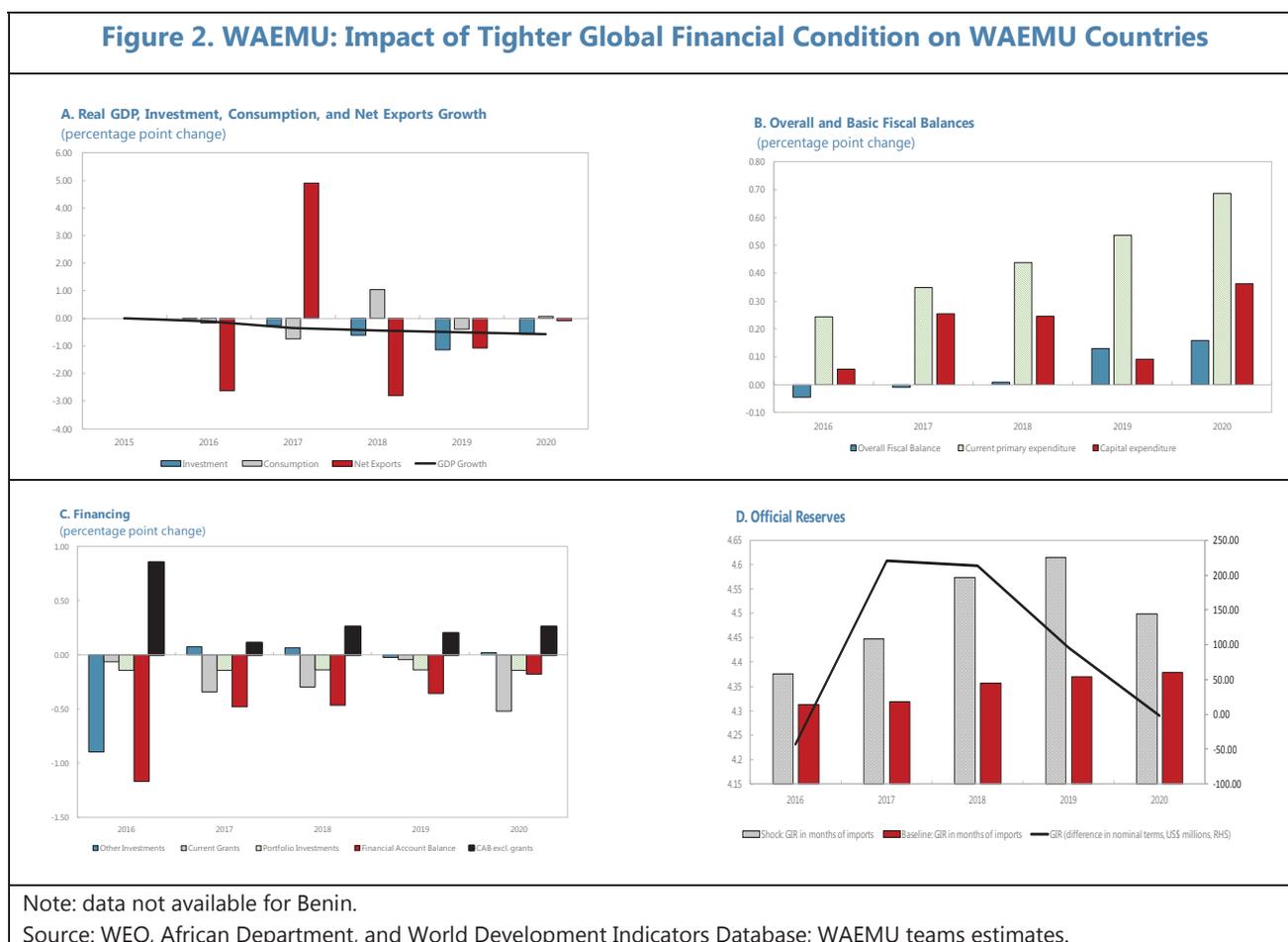

Figure 1. WAEMU: Impact of Delays in Structural Reforms on WAEMU Countries
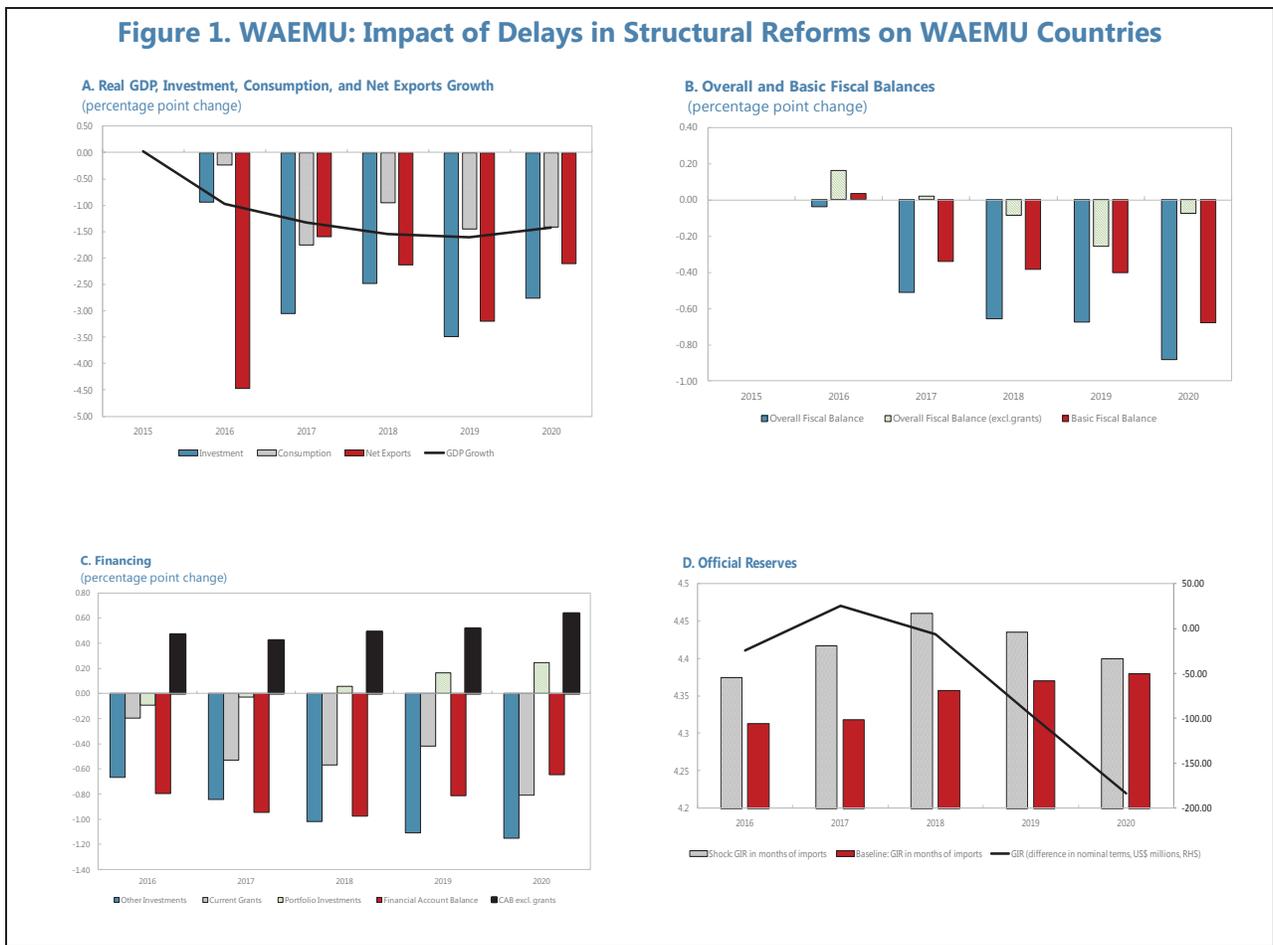
C. Impact of the Realization of External Risks

3.   Simulations show that tighter global conditions in 2016–17 would affect WAEMU growth mainly through lower investment. A global financial volatility scenario assumes a reassessment by investors of underlying risks and a disorderly overshooting in the normalization of risk premia across the globe, leading to higher corporate default rates, heightened money market spreads, and depressed consumer and investor demand throughout the world. Under this scenario, lower risk appetite among investors reduces the availability of both external financing and capital inflows to the region by about one percentage point compared to the baseline (Figure 2C). While regional exposure to global financial markets remains limited, increased financing costs impacts financing at the regional sovereign bond market. Initially, the governments are expected to maintain investment efforts and face higher debt service, which would contribute to an increase in the overall fiscal deficit (Figure 2B). Private investment growth on the other hand is projected to slow down by about 0.5 percentage point, on average, compared to the baseline (Figure 2A). Over the medium term, as external financing for the region is expected to resume slowly, more costly regional financing would lead to lower public investment growth by about 0.8 percentage point compared to the baseline. Overall, this scenario would reduce WAEMU growth by about 0.6 percentage points, on average.

Figure 2. WAEMU: Impact of Tighter Global Financial Condition on WAEMU Countries

Note: data not available for Benin.
Source: WEO, African Department, and World Development Indicators Database; WAEMU teams estimates.

4.   Global and regional growth shocks will impact economic growth in WAEMU countries.
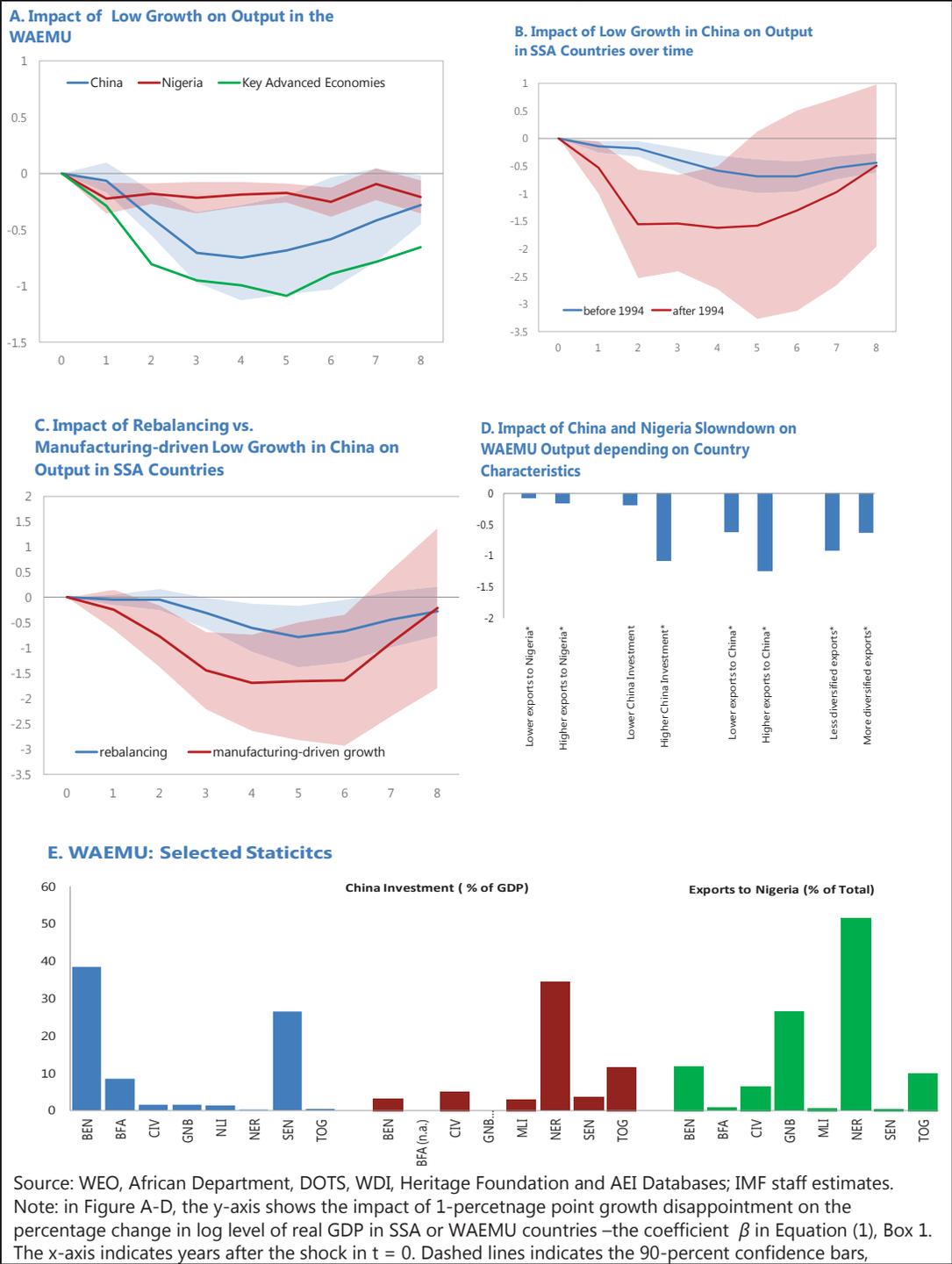We model the impact of lower growth in key economic partners of the region (for methodology see box 1).

- ***Lower growth in key advanced economies***. Result show that a 1-percentage point lower growth in key advanced economies would reduce WAEMU real GDP by about 0.8 percent after two years and about 1 percent at the peak after five years (Figure 3A).

- ***Lower growth in China.*** A slowdown in China would directly affect regional exports and investment flows. WAEMU countries could also be affected through cross-border spillovers from the Euro area and other emerging market partners. A 1-percentage point lower growth in China is estimated to lower WAEMU real GDP by about 0.5 percent in the short term. It is worth noting that the effects of a lower growth in China have increased over time, and also become more heterogeneous across all countries(Figure 3B). Finally, lower growth, driven by a slowdown in the manufacturing sector has significant spillover effects suggesting a potential important role of China rebalancing process on the region[3] (Figure 3C).

- ***Lower growth in Nigeria.*** A 1-percentage point lower growth in Nigeria would reduce WAEMU real GDP by 0.2 percent after 3-4 years.

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[3] On average, the impact of China slowdown on WAEMU output is not statistically different from that of other SSA countries—Results available upon request). However, the impact of China slowdown on SSA and WAEMU countries growth seems larger than their average impact on growth in the other advanced and emerging countries (IMF, 2013).

Figure 3. WAEMU: Impact of lower Growth Episodes in SSA (1980–2014)

A. Impact of Low Growth on Output in the WAEMU

B. Impact of Low Growth in China on Output in SSA Countries over time

C. Impact of Rebalancing vs. Manufacturing-driven Low Growth in China on Output in SSA Countries

D. Impact of China and Nigeria Slowdown on WAEMU Output depending on Country Characteristics

E. WAEMU: Selected Staticitcs

China Investment (% of GDP)

Exports to Nigeria (% of Total)

Source: WEO, African Department, DOTS, WDI, Heritage Foundation and AEI Databases; IMF staff estimates.
Note: in Figure A-D, the y-axis shows the impact of 1-percetnage point growth disappointment on the percentage change in log level of real GDP in SSA or WAEMU countries –the coefficient β in Equation (1), Box 1. The x-axis indicates years after the shock in t = 0. Dashed lines indicates the 90-percent confidence bars,

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Box 1. WAEMU: Impact of China Slowdown on Growth in Sub-Saharan African and WAEMU Countries

As China has become an important economic partner for most Sub-Saharan African (SSA) countries, signs of China slowdown have raised concerns about its impact on growth in the region. Much attention has focused on its direct effects on trade and investment—in particular in infrastructure—but also on its indirect effects through lower commodity prices and through growth rebalancing in China. To empirically assess these concerns, we analyze the impact of lower growth episodes in China on growth in SSA countries, in general, and the WAEMU region in particular, over the period 1980-2014.[1]

Following IMF (2013) and Morgan et al. (2004), lower growth episodes in China —ε_{it}—are identified as a deviation from the average growth for China over the entire period and from average growth for 148 countries in the world, by estimating the following regressions:

$$\Delta y_{it} = \alpha_i + \gamma_t + \varepsilon_{it}$$
(1),

where y is the (log) of real GDP, α_i and γ_t capture, respectively country- and time-fixed effects. The dynamic impact of China growth shocks on growth in African countries is then estimated using local projection methods (Jorda, 2005) as follows:

$$\Delta y_{it+k} = \alpha_i + \theta t + \beta \varepsilon_{china,t} + \mu_{it}$$
(2),

where Δy_{it+k} captures the change in the (log of) real GDP in country i between time t and $t+k$, with k=1,…, 8. The coefficient θ captures the impact of previously identified China growth disappointments and the coefficient δ—the impact of global shocks. α_i are country fixed-effects and t is a time trend.

[1] Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Republic of Congo, Côte d'Ivoire , Equatorial Guinea, Eritrea, Ethiopia, Gabon, the Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Serra Leone, South Africa, Swaziland, São Tomé and Príncipe, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

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5.   **Spillover effects become more important with the strengthening of trade and financial linkages**. The above results suggest that the impact of growth shocks in China and Nigeria is larger in countries with higher trade openness[4], less diversified export structure, and with larger investment from China. For instance, a 1-percent point lower growth in China reduces real GDP by 1.2 percent at the peak in countries with more trade openness as Benin, Senegal, and Burkina Faso compared to 0.4 percent for less open economies (Figure 3D).[1] The results also indicate that a lower growth in

[4] Measured as exports to China in percent of total exports

[1] Transit and informal trade might an important spillover channel of shocks in particularly in costal countries as Benin and Togo (IMF, 2012; IMF, 2015).

China reduces real GDP by 1.2 percent in WAEMU countries where Chinese investment[2] has been above the regional average, such as Niger and Togo. However, spillover effects are smaller for countries with a more diversified export structure as Cote d'Ivoire and Senegal. Cross-border banking groups—with ten pan-African banks already present in the SSA region and, at least, three in the WAEMU and neighboring Nigeria—constitute another rapidly developing shock propagation channel (IMF, 2014).

References

IMF, 2012. "Sub-Saharan Africa. Maintaining Growth in an Uncertain World." Regional Economic Outlook.

IMF, 2013. "Dancing Together? Spillovers, Common Shocks, And the Role of Financial and Trade Linkages," World Economic Outlook, October.

IMF, 2014. "Pan-African Banks: Opportunities and Challenges for Cross-Border Oversight."

IMF, 2015. "Benin: 2015 Article IV Consultation", IMF Country Report No. 16/6.

Jordà, Ò., 2005. "Estimation and Inference of Impulse Responses by Local Projections," American Economic Review, American Economic Association, vol. 95(1), pages 161-182.

Morgan, D., B. Rime, and Ph. E. Strahan, 2004."Bank Integration and State Business Cycles," The Quarterly Journal of Economics, vol. 119, No.4, pp.1555-84.

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[2] Measured as Chinese large investment and contracts (excluding bonds).