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BOARD
MEETING**

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March 9, 2015

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WEST AFRICAN ECONOMIC AND MONETARY UNION

SELECTED ISSUES

March 6, 2015

Approved By
**The African
Department**

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EXTERNAL STABILITY ASSESSMENT¹

The current account deficit declined in 2014. While gross international reserve coverage has increased slightly, part of the current account deficit has been financed by a decline in commercial banks' net foreign assets. Contingent on the implementation of government's consolidation plans, and helped by a favorable oil price outlook, the current account deficit would further gradually decline and be matched by sufficient financial inflows in the medium term. According to various metrics, the real exchange rate appears to be broadly aligned with fundamentals. International reserve coverage should increase to provide stronger buffers against immediate short-term risks. Structural competitiveness and investment efficiency improvements will be essential to ensure that the planned large investment programs translate into growth and export gains as well as increased private inflows into the region.

A. External Sector Developments

- 1. Increased investment efforts have led to a widening of the current account deficit within the last years, with financial inflows not being able to fully keep up with the pace** (Figure 1). After expanding by 4 percent of GDP to 11.6 percent of GDP in 2013, the trade deficit is projected to stay above 10 percent of GDP in 2014. Increased capital imports for necessary infrastructure investments (Côte d'Ivoire) as well as investments into the extractive industry (Niger and Benin) have been driving this trend to a large extent. The current account deficit decreased to 7.3 percent of GDP in 2014, down from 8.1 percent in 2013, mainly on account of more favorable terms of trade. Capital and financial inflows into the region have also increased, with FDI and concessional loans remaining stable sources of financing and two WAEMU countries having successfully tapped international capital markets in 2014. Gross International reserve coverage has increased slightly, from 4.5 to 4.6 months of extra-regional imports, but part of the current account deficit has been financed through a decline in commercial banks' net foreign assets.
- 2. The current account deficit is expected to gradually decline and be fully financed in the medium-term, with some downside risks** (Figure 2). In line with a consolidation and re-prioritization of public budgets to investment spending, and helped by a favorable oil price outlook, the current account deficit is expected to decline despite large investment projects envisioned in several countries in the medium-term. Sufficient financial inflows are projected to balance the BOP. However, the outlook is subject to downside risks. In the short-term, a slow containment of Ebola could impact trade and tourism, with severe implications should the disease spread into the region. A decline in non-oil commodity demand and prices, in particular for gold, driven by a slowdown in emerging markets could have a negative impact on several member countries' trade balances. Tighter external financing condition due to the normalization of advanced markets' monetary policy could impact some countries' plans to access international markets. In the medium-term, continued

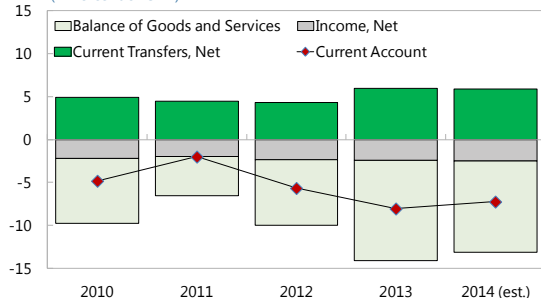
¹ Prepared by Monique Newiak.

fiscal consolidation and a break from the WAEMU's comparatively modest historical economic growth will be needed to preserve external sustainability (Box 1). High investment efficiency and improvements to the business climate will be essential to achieve this break, to boost exports and to attract private inflows.

Figure 1. WAEMU: Recent Developments

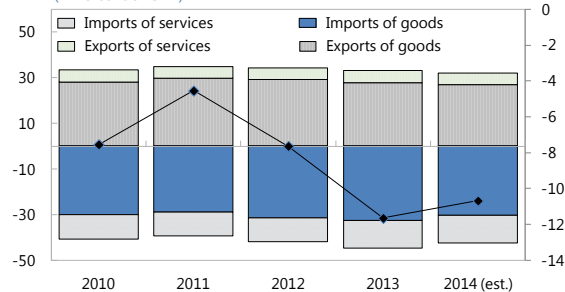
The current account deficit has been expanding recently reflecting a widened trade balance, ...

Current Account Balance
(In Percent of GDP)



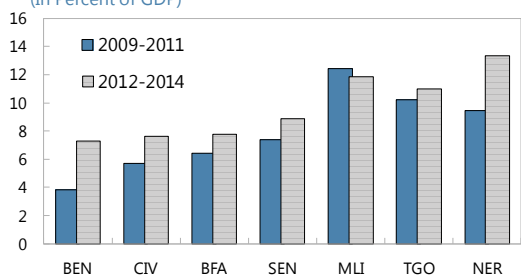
... driven by an increase in imports, ...

Trade Balance
(In Percent of GDP)



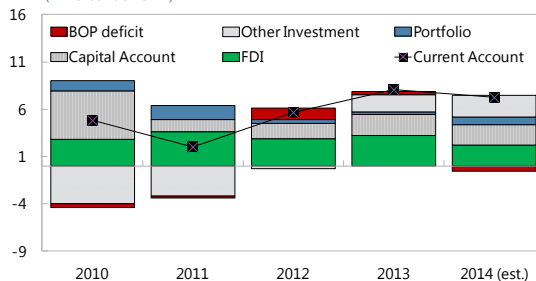
... largely due to higher capital goods imports in most countries.

Capital Imports
(In Percent of GDP)



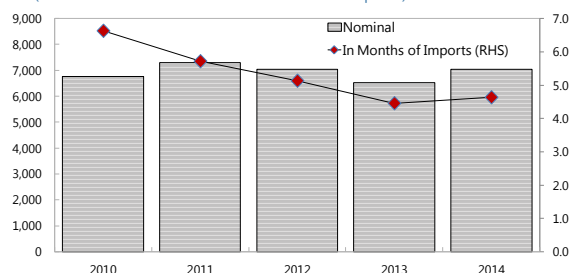
Financial and capital accounts have also increased, but at a slower pace.

Financing Sources
(In Percent of GDP)



As a consequence, gross international reserve coverage has been trending down.

Gross International Reserves
(In Billion FCFA and Months of Next Year's Imports)



The real exchange rate has been relatively stable.

Real and Nominal Effective Exchange Rates
(Index, 2005 = 100)

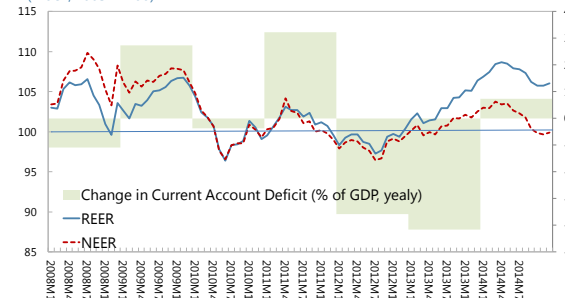
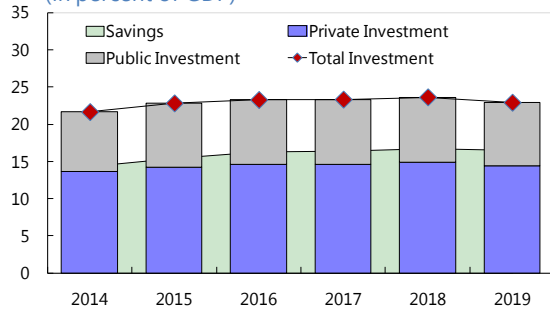


Figure 2. WAEMU: Outlook

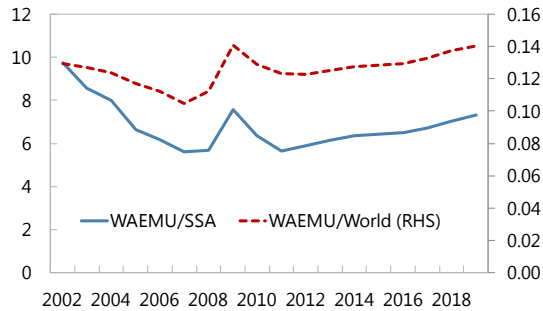
Investment is expected to remain high in the medium-term, but increasingly financed by domestic savings, ...

National Savings and Investment (in percent of GDP)



The contribution of WAEMU's exports to SSA and world exports would increase gradually, ...

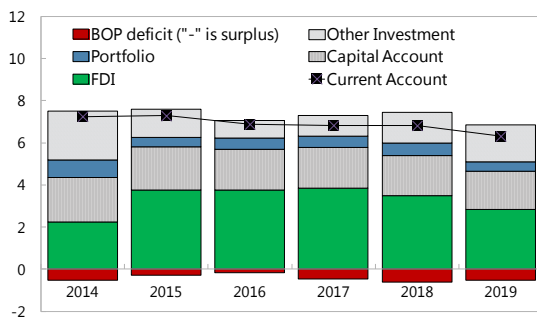
Exports of Goods and Services (In Percent of SSA and World Exports)



Sources: World Economic Outlook

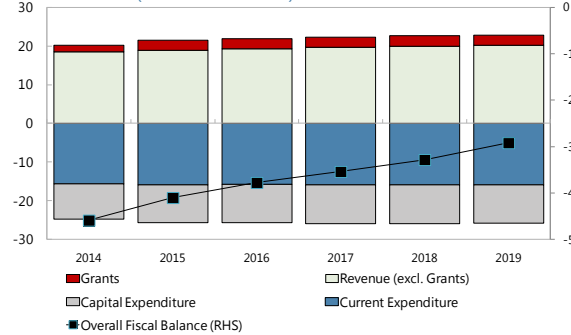
Financial and capital accounts would finance the current account deficit, generating BOP surpluses and ...

Financing Sources (In Percent of GDP)



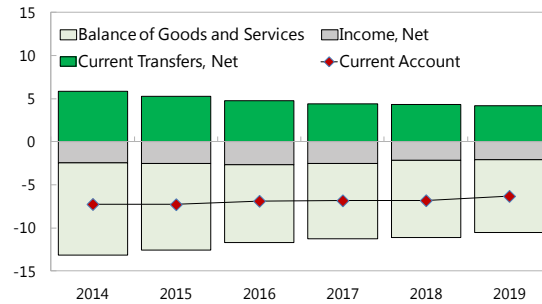
... in line with governments' consolidation plans.

Overall Fiscal Balance (Cash Basis) and Components, 2014-2019 (In Percent of GDP)



... and the current account would improve continuously.

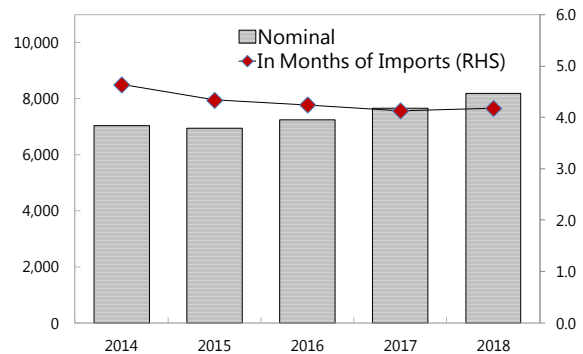
Current Account Balance (In Percent of GDP)



... thus building-up GIR and stabilizing reserve coverage in the medium term.

Gross International Reserves

(In Billion FCFA and Months of Next Year's Imports)



Box 1. WAEMU: Growth and Fiscal Consolidation Scenarios

External sustainability would weaken in the absence of fiscal consolidation or if growth went back to its historical average.

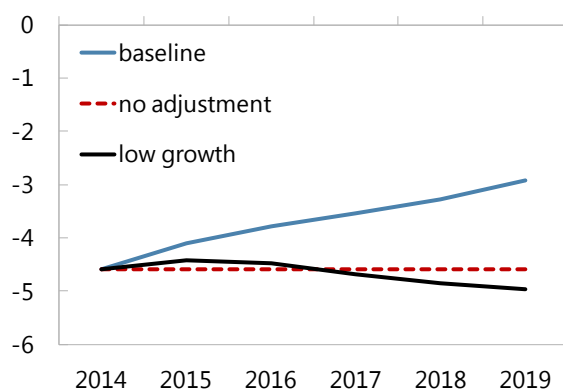
No fiscal adjustment scenario

- **Assumptions.** The overall fiscal deficit stays at its projected 2014 level in percent of GDP.
- **Results.** The current account deteriorates compared to the baseline because of higher imports induced by the more expansionary fiscal stance. Therefore, GIR would fall to 2 months of next year's imports, far under the optimal levels under the standard metrics (5-12 months of imports, Figure 6). The REER would be more overvalued (by 14.2 percent according to the external sustainability approach, Figure 3).

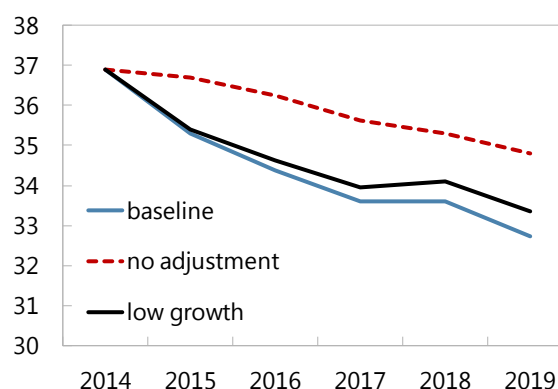
Historical growth scenario

- **Assumptions.** Medium-term growth for 2015-19 is set at its historical average (4.4 percent, 2004-13, excluding Côte d'Ivoire in light of protracted crisis during that period).
- **Results.** The fiscal deficit deteriorates compared to the baseline as the expenditures are kept constant in nominal terms while tax revenue decreases owing to lower growth. The current account deteriorates too as only private sector imports react to lower growth. As a result, GIR would fall to about 3½ months of extra-regional imports. The REER would be slightly more overvalued (by 10.7 percent according to the external sustainability approach, Figure 3).

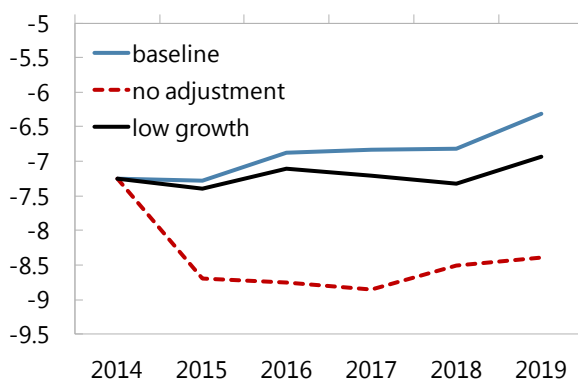
Overall Fiscal Balance/GDP



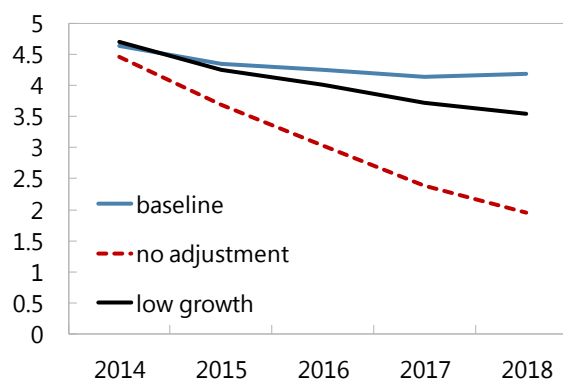
Extra-Regional Imports/GDP



Current Account incl. Grants/GDP



GIR/Months of Next Year's Imports



B. Exchange Rate Assessment

Based on four methodologies which give a qualitatively similar assessment, the REER appears to be broadly in line with fundamentals (Figure 3).

3. To assess the stance of the current account for the WAEMU as a whole, this note re-estimates the “EBA-lite”² regression to include WAEMU aggregates (Figure 3, chart 1 and 2). The regression estimates are very similar to the original approach by Chen (2014). The fitted values resulting from this exercise capture the current account deficit dynamics well, but consistently underestimate its size, suggesting that countries with similar characteristics, such as demographics, institutions and size of private and public transfers and fiscal stance, have, on average, experienced lower current account deficits over time.

4. Based on the EBA-lite approach, the WAEMU’s current account stance in 2013 can be decomposed as follows:

$$\text{Actual CA} = \text{CA Gap} + \underbrace{(\text{Fitted CA} - \text{Policy Gap})}_{\text{CA Norm}}$$

in which *CA Gap* is the current account misalignment, *Fitted CA* is the predicted value from the regression above and *Policy Gap* relates a country’s actual policies not only to its optimal policies, but also to the average policy misalignment in the rest of the world.

5. The EBA-lite macro-balance approach suggests that the WAEMU’s REER is broadly in line with fundamentals. Driven mainly by its relative fiscal stance, the WAEMU’s the policy gap is positive which decreases the current account norm to -5.1 percent of GDP. This norm is adjusted further downwards by 0.6 percent of GDP, related to one-off investments in Benin. The current account gap of -2.4 percent of GDP then implies an overvaluation of the REER by 5.7 percent, suggesting that the REER is broadly in line with fundamentals.

6. An assessment based on CEGR broadly confirms these results. The three CEGR methodologies suggest that the real exchange rate misalignment ranges between an overvaluation of 1 to 9.8 percent, and thus provide some ranges around the EBA-lite estimate. As the CEGR macro-balance approach takes a medium-term perspective on fundamentals, it, as expected, suggests a smaller current account gap than that implied by the EBA-lite approach which is based on short-term fundamentals. The current account to GDP ratio which stabilizes NFA at roughly the median level observed for lower-middle income countries, lies at -3.9 percent of GDP, implying a misalignment of the REER of about 9.8 percent. Finally the equilibrium real exchange rate approach implies an over-valuation of the REER 8.9 percent which is almost entirely driven by productivity

² External Balance Assessment of low income and emerging markets.

differences to the rest of the world. Implementing efficiency enhancing reforms will thus be an important driver of external stability (see also note on structural transformation).

Figure 3. WAEMU: Exchange Rate Assessment

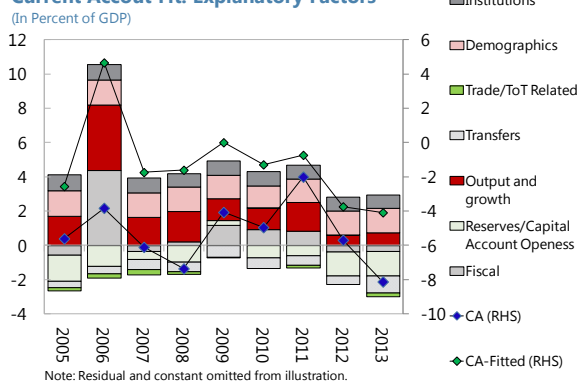
EBA-lite regressions including WAEMU aggregations yield qualitatively similar results to the original exercise, ...

EBA-lite Coefficients (Panel Regressions with WAEMU Region Aggregates)			
Cyclically adjusted Fiscal Balance	0.531 *** (0.000)	GDP growth-forecast in 5 years	-0.427 *** (0.001)
(Change in Reserves)/GDP* K controls	0.584 *** (0.000)	Safer Institutional/Political Environment (index)	-0.0289 (0.242)
Demeaned Private Credit/GDP	-0.045 *** (0.000)	Dummy=1 if country is a financial	0.0435 *** (0.000)
LNFA/Y	0.0077 *** (0.000)	Aid/GDP	-0.283 *** (0.000)
L.Output per worker-relative to top 3 economies	-0.055 ** (0.019)	Remittance/GDP	-0.0672 (0.128)
L.Relative output per worker*K openness	0.135 *** (0.000)	Output Gap	-0.147 *** (0.005)
Oil and Natural Gas Trade	0.194 *** (0.000)	Commodity ToTgap*Trade	0.0898 (0.184)
Balance*resource temporariness	-0.182 *** (0.000)	Openness	-0.0410 *** (0.000)
Dependency Ratio	0.107 ** (0.035)	Constant	
Aging Speed (proj. change in old age dependency ratio)			
Observations	2074	R-squared	0.405

p-values in parentheses; * p<0.10, ** p<0.05, *** p<0.01

... with the fitted values from the regression capturing well the dynamics of the current account, but less its size.

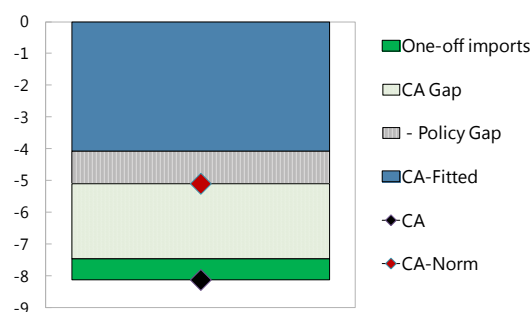
Current Account Fit: Explanatory Factors



The current account misalignment is decreased by the policy gap, ...

Structural and Policy Contributions to Current Account Misalignment, 2013

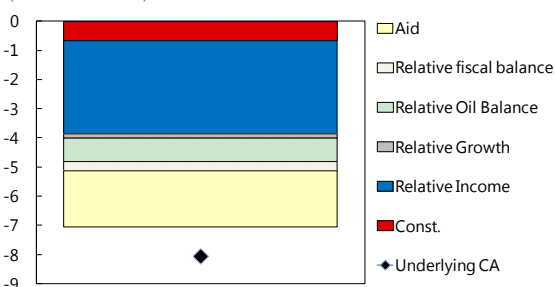
(In Percent of GDP)



The medium-term based CEGR approach qualitatively confirms the results of the EBA-lite assessment.

Macrobalance Approach Current Account Norm 2019

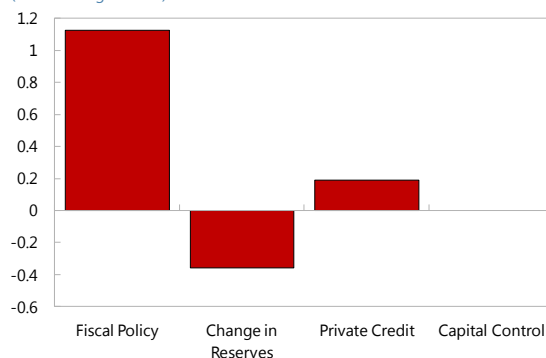
(In Percent of GDP)



... explained mainly by the fiscal policy stance.

Drivers of the Policy Gap

(In Percentage Points)



Considering all used approaches, the WAEMU's REER appears to be broadly in line with fundamentals

	Current Account/GDP		REER ¹
	Norm	Underlying ²	
EBA-lite	-5.7	-8.1	5.7
CEGR			
Macrobalance	-7.6	-8.1	1.0
Equilibrium real exchange rate	8.9
External sustainability	-3.9	-8.1	9.8

¹Positive values indicate overvaluation

²Short-term incl. grants, medium term excl. grants

C. Reserve Adequacy

7. Gross international reserve coverage in the WAEMU in 2014 has increased slightly in 2014 while commercial banks net foreign assets have declined.

Gross international reserves coverage declined substantially since 2010 when it stood at 6.6 months of imports but increased slightly in 2014 compared to 2013 (to 4.6 month of imports, up from 4.5). Gross reserves cover about 40 percent of broad money, and approximately 80 percent of short-term liabilities. GIR coverage of narrow money is on a downward trend but still significantly higher than the floor (84 percent compared to the floor of 20 percent of narrow money) that acts as a warning signal under the zone's monetary arrangement with France. (Figure 4). Banks' net foreign exchange position (NFA) has also decreased and turned negative (Figure 5).

8. A reserve adequacy metric suggests that the region's reserve coverage should increase to provide buffers against typical external shocks

(Figure 6). Following the approach by Dabla-Norris et al. (2011), this note estimates the "optimal" level of reserves by maximizing their net benefits. These net benefits depend on the expected cost of a crisis given the stock of reserves, a vector of fundamentals (exchange rate regime, fiscal balance, institutions), the exposure to shocks (terms of trade, external demand, FDI, aid), and the cost of holding reserves (interest rate differential with the rest of the world). The approach suggests about 5 to 12 months of imports coverage for the region depending on the opportunity cost of reserves, implying that the region's reserve coverage is currently below "optimal" levels, even though this metric does not fully apply for the WAEMU given the commitment of France to back the convertibility of the CFA franc. Given current macroeconomic projections, and assuming no significant change in the CPIA³ rating, projected reserve coverage could stay below these levels even in the medium term.

Figure 4. WAEMU: Foreign Exchange Coverage

(In Percent of Other Aggregates)

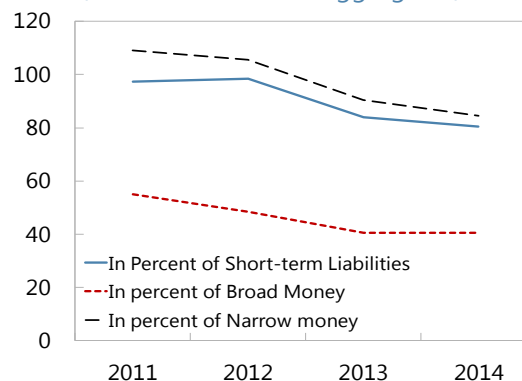
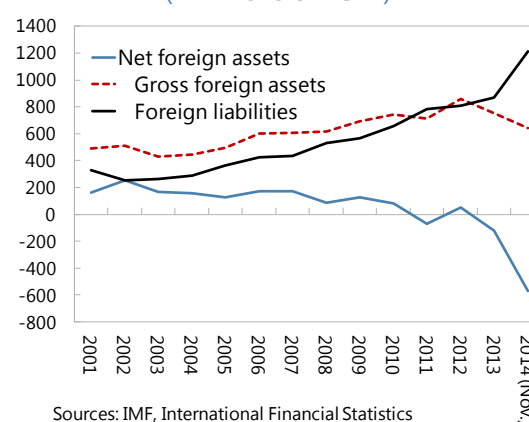


Figure 5. WAEMU: NFA-Commercial Banks

(In Billions of FCFA)



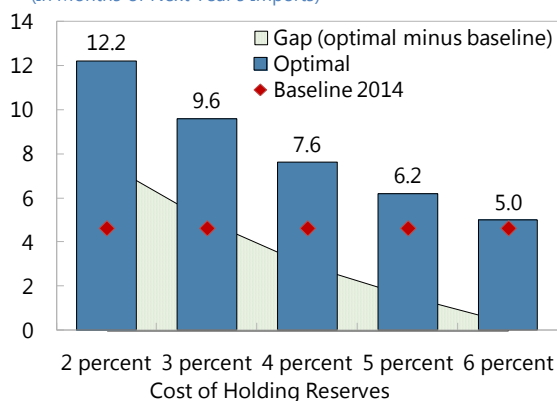
Sources: IMF, International Financial Statistics

³ Country Policy and Institutional Assessment.

Figure 6. WAEMU: Reserve Adequacy

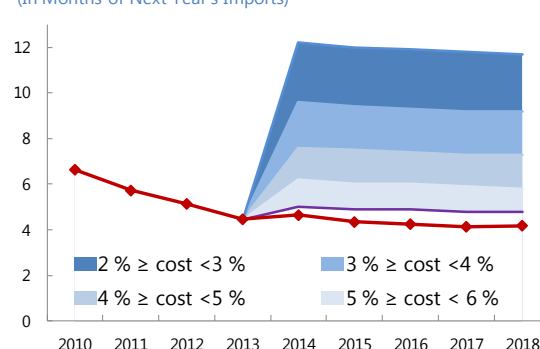
The region's gross international reserves are expected to fall short of their "optimal" levels in 2014...

Optimal and Projected Level of Reserves, 2014
(In Months of Next Year's Imports)



...and optimal reserve metrics suggest that reserve coverage should be built up over the medium-term.

Optimal and Projected Level of Reserves, 2014-2018
(In Months of Next Year's Imports)



D. Non-Price Competitiveness

9. The business climate has improved on average, but remains challenging (Figure 7).⁴ The WAEMU's position in the Doing Business ranking has improved compared to the 2014 Doing Business assessment, with half of the regions' member countries improving their ranking by at least 10 positions. However, all WAEMU countries are still lagging behind African and Asian benchmark groups.⁵ Access to and the quality of electricity provision, the registration of property, the enforcement of contracts, investor protection and financial access (see also notes on financial inclusion and mobile payments) appear to pose particular challenges to firms and private investors. Relative weaknesses vary across WAEMU countries and sub-dimensions of the rating. E.g., the cost and time to register property is significantly different across member countries, and director liability is largely driving the negative ranking on the dimension of minority investor protection.

10. A thought experiment highlights how the region's overall ranking would improve if all WAEMU countries caught up in one area to benchmark levels, other things equal. The exercise aims at emphasizing areas in which reform efforts could yield particularly high gains in terms of the relative ranking. To this end, the values of each sub-category of the Doing Business ranking are replaced with better SSA benchmark country averages for each WAEMU which is lagging behind. The results show that simplifications in taxation and registration of property have the largest impact on the average ranking in the region (up to 7 ranks improvement *on average* per country). Improvements to access to electricity, a decrease in the impediments to cross-border trade and

⁴ These indicators should be interpreted with caution because of the limited number of respondents, a limited geographical coverage, and standardized assumptions on business constraints and information availability.

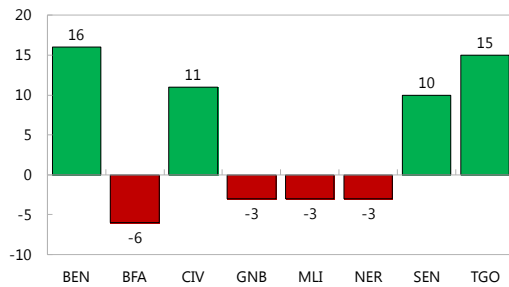
⁵ Asia benchmark: Bangladesh, Cambodia, India, Laos, Nepal, and Vietnam. Africa benchmark: Ghana, Kenya, Lesotho, Rwanda, Tanzania, Uganda, Zambia. For selection method, see Annex II.

simplifications of tax procedures would yield the highest individual country gains (up to 15 ranks improvement on individual basis).

Figure 7. WAEMU: Doing Business

Many WAEMU countries have made large jumps in the Doing Business ranking within the last year...

Improvement in Doing Business Ranking
(In Number Ranks)

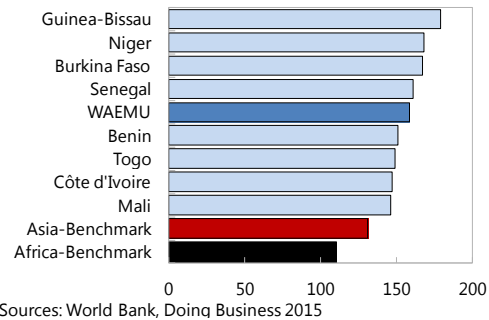


Sources: World Bank, Doing Business 2015.

... but the business environment remains challenging,...

Ease of Doing Business 2015

(Rank among 189 Economies)

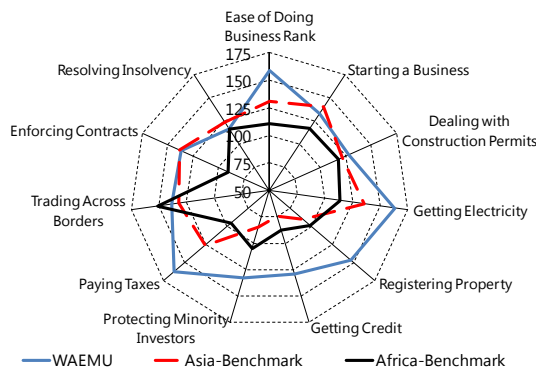


Sources: World Bank, Doing Business 2015

... with the WAEMU being outperformed by benchmark countries in almost all areas of the business climate.

Ease of Doing Business 2015

(Rank among 189 Economies)

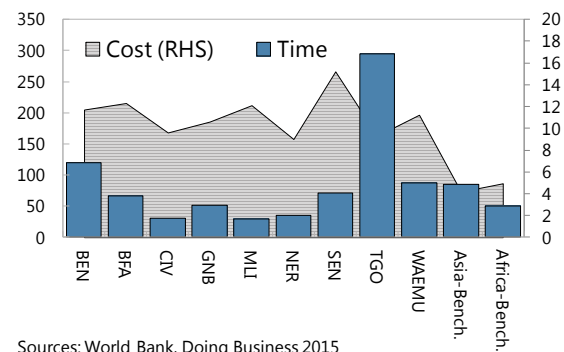


Sources: World Bank, Doing Business 2015

Types of constraints vary across member countries...

Registering Property

(Time in Days, Cost in Percent of Property Value)

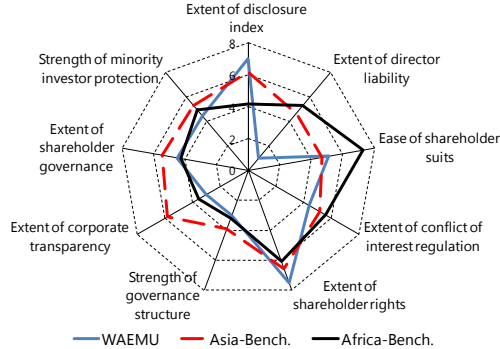


Sources: World Bank, Doing Business 2015

... and dimensions within the assessment.

Protecting Minority Investors

(Index, Higher Index = Better Protection)

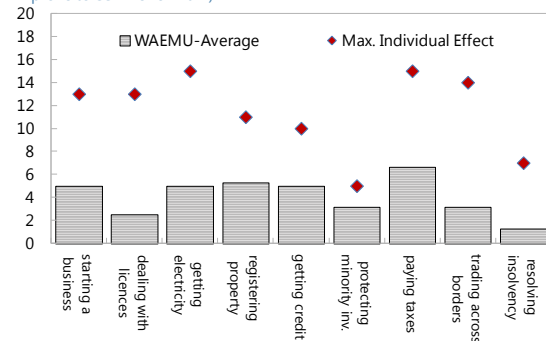


Sources: World Bank, Doing Business 2015

Barriers to trade, the efficiency of tax payments and access to electricity cause the largest gaps to peers' performance.

Effects of Policy Changes on Doing Business Ranking

(Number of Ranks Improved if Conditions in Respective Category Improve to SSA Benchmark)



References

Chen, Ruo (2014): "EBA-lite," methodological background presentation, unpublished.

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DEVELOPMENTS IN CENTRAL BANK LIQUIDITY PROVISION: A HARBINGER OF WIDER MACROFINANCIAL RISKS IN THE WAEMU?¹

Since 2011, the liquidity position of the commercial banking system vis-à-vis the BCEAO has swung from a structural liquidity surplus to a deficit. This reflects a sharp increase in commercial banks' borrowing from the central bank which has been used to fund purchases of government securities. The underlying causes are likely a combination of widening fiscal and external imbalances and carry-trade activity by some banks. These developments, in turn, pose risks to fiscal and financial stability, financial development, and monetary policy effectiveness. Although effective implementation of planned fiscal consolidation is the most appropriate policy response, the WAEMU authorities should nevertheless monitor closely these trends in liquidity and consider whether any pre-emptive policy action might be appropriate, in order to prevent such risks from crystallizing.

A. Introduction

1. Since 2011, commercial banks have increased sharply their use of BCEAO liquidity and moved from a structural liquidity surplus to a deficit. Between end-2011 and November 2014, outstanding central bank credit provided by the BCEAO to commercial banks increased from CFAF 630bn to CFAF 1980bn. During the same period, banks' own reserves held at the BCEAO fell from CFAF 890bn to CFAF -500bn, leading to a decline in the coverage ratio (own reserves to required reserves) from 0.8 to -0.7. As a result, the liquidity position of the banking system vis-à-vis the central bank swung from surplus into deficit.²

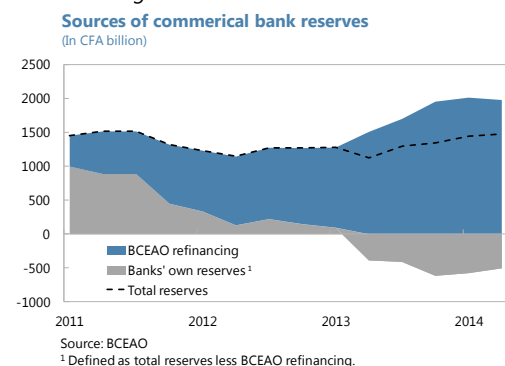
2. Purchases of government securities have been the main counterpart to the increase in borrowing from the central bank. Commercial banks expanded their holdings of government securities from 17.7 percent to 22.0 percent of total assets between 2011 and 2014 – a similar magnitude to the increase in their stock of outstanding borrowing from the BCEAO (from 4.3 percent to 9.0 percent of total assets). Over the same period, the level of banks' excess reserves has remained broadly constant, suggesting that banks have been increasing their recourse to central bank credit, not for liquidity management purposes but to fund higher levels of lending to the government. Consistent with this, individual bank-level data also show that higher levels of borrowing from the BCEAO are associated with larger holdings of government securities.

¹ Prepared by John Hooley.

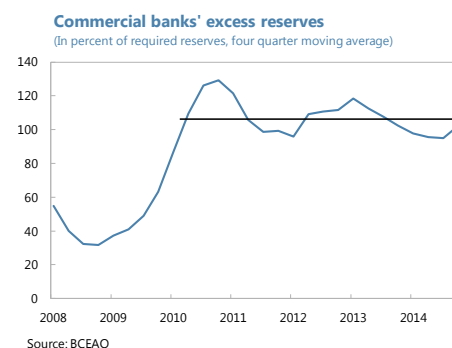
² Note, a liquidity deficit of the banking system is not undesirable per se, since it potentially affords the BCEAO greater traction over the transmission of monetary policy.

Figure 1. WAEMU: Developments in Commercial Banks' Balance Sheets

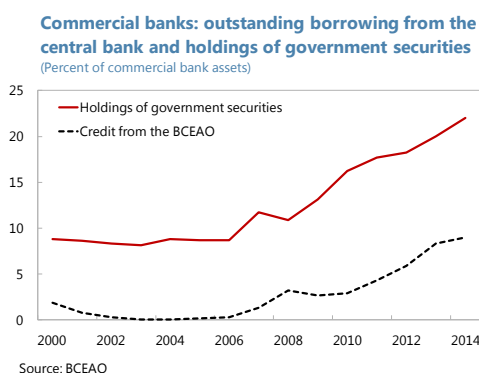
Commercial banks have moved from a liquidity surplus to a deficit by increasing their use of central bank liquidity, while running down own reserves.



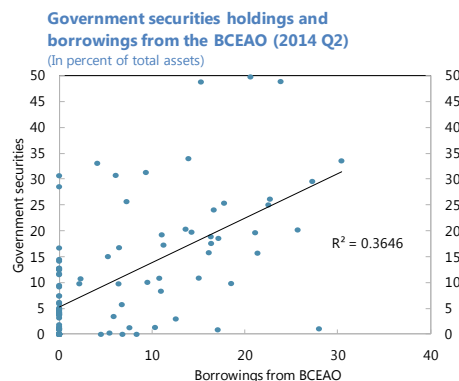
Higher levels of borrowing from the central bank do not seem to have been motivated by banks' desire to bolster liquidity.



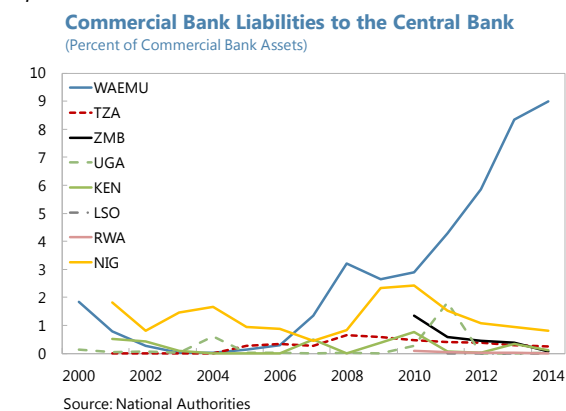
Banks appear to have been using BCEAO funds to invest in government securities. This is evident both over time ...



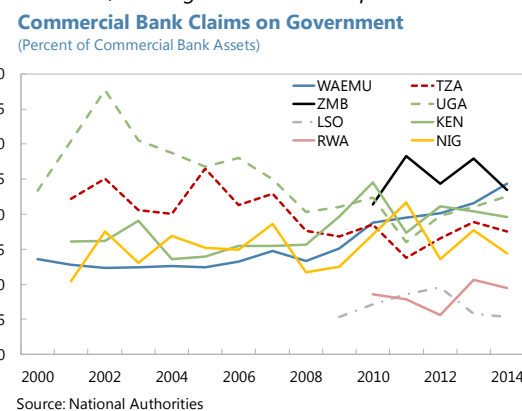
... and in the cross section of individual banks.



The level of central bank liquidity provision to commercial banks is unusually high in the WAEMU compared to other African countries ...



... while the level of commercial banks' holdings of government securities in the WAEMU is more similar to other countries, although the recent sharp increase is not.



3. Around half of the banking system currently draws on BCEAO liquidity. Individual bank-level data suggest that 46 out of a total of 106 banks that submitted data for stress-testing

purposes at end Q2 2014 had outstanding borrowings from the BCEAO. The biggest users of BCEAO liquidity were based in Benin, followed by Senegal, Cote D'Ivoire and Burkina Faso.

4. Cross-country comparison suggests that the level of central bank liquidity provision to commercial banks is unusually high in the WAEMU. Credit from the BCEAO represents around 9 percent of commercial bank assets in the WAEMU, compared to less than 1 percent in other African comparator countries. And while the level of WAEMU commercial banks' holdings of government securities is more similar to other countries (at around 20 percent of assets), the recent sharp increase is not.

B. Possible causes

5. The underlying drivers of these developments likely reflect a combination of widening fiscal and external imbalances and carry-trade activity by banks.

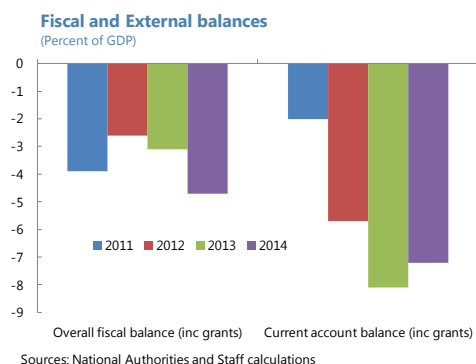
Fiscal imbalances

6. In 2014, the overall fiscal deficit in the WAEMU increased to 4.7 percent of GDP, an historic high. Much of this extra borrowing has necessarily had to be financed by the domestic commercial banks, given the lack of non-bank domestic investors and the limits on external borrowing for WAEMU members in order to maintain external debt sustainability after debt relief.

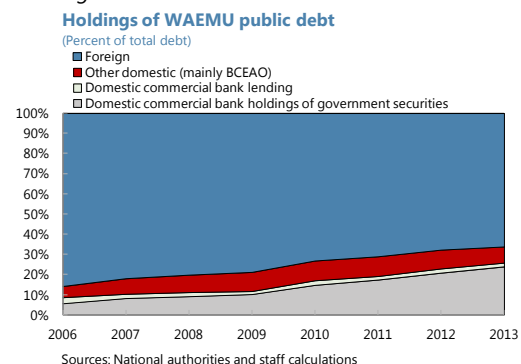
7. And the fact the commercial banks appear to have financed additional lending to governments with central bank credit, suggests that current levels of sovereign borrowing may be excessive relative to the capacity of the regional market. Increased financing constraints are also evident from data on WAEMU T-bill auctions, which in 2014 were undersubscribed.

Figure 2. WAEMU: Fiscal and External Imbalances

Fiscal and external balances have deteriorated since 2011..



...while the share of government debt held by the domestic banking sector has increased.



External imbalances

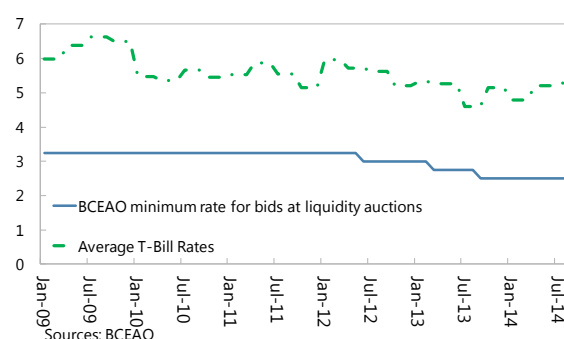
8. Higher fiscal deficits have also coincided with widening external deficits. The current account deficit in the WAEMU was 7.2 percent of GDP in 2014, compared to 2 percent in 2011. As the demand for foreign exchange among importers has increased, the foreign exchange reserves of commercial banks have declined, leading to a deterioration in their liquidity position. The BCEAO was then obliged to provide the shortfall in liquidity in order to meet its operational target of maintaining short-term money market rates close to the policy rates.

Banking sector carry trade

9. Market contacts suggest that some banks may be taking advantage of cheap short-term funding from the BCEAO in order to purchase longer-term and higher-yielding government securities. Given the spread between the BCEAO minimum bid rate (2.5 percent) and T-bills (about 5 percent), this strategy can potentially generate significant profits for banks.

C. Risks

10. The elevated and increasing level of central bank liquidity provision to commercial banks poses several potential macrofinancial risks, including to fiscal and financial stability, financial development and the effectiveness of macroeconomic policy.

Figure 3. WAEMU: Interest Rates
(In Percent)

Fiscal and financial stability

11. Government borrowing that is indirectly financed by short-term BCEAO credit poses liquidity risk for governments and banks. If WAEMU governments become too dependent on BCEAO liquidity injections to the banking system in order to finance their deficits, a tightening of the monetary stance could create a financing gap. At the same time, a monetary tightening could leave banks unable to finance their holdings of longer-term government securities. If banks are unable to sell these securities due to the lack of a liquid secondary market, this could pose risks to financial stability.

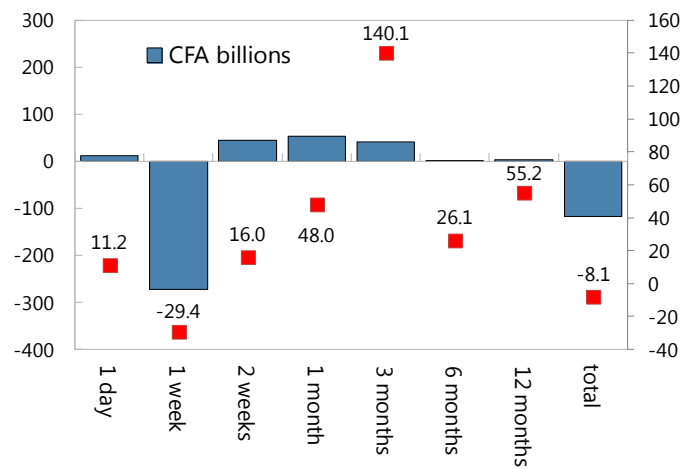
12. A high concentration of government debt held by the domestic banking system creates potentially risky sovereign-bank feedback loops. In 2013, 26 percent of government debt was held by the domestic banking sector, compared to 17 percent in 2010. A high concentration of government debt held by domestic banks creates a direct feedback loop between fiscal and bank stability. Banks in the WAEMU are protected from market risk by holding government securities to maturity (and due to the lack of a well-functioning secondary market). Nevertheless, a sovereign default by one or more WAEMU members could still pose risks to bank solvency, given that banks are not obliged to hold capital against their lending to governments. On the other hand, WAEMU governments may find it difficult to finance their deficits in the event of instability in the domestic banking system.

Financial development

13. The development of interbank and other financial markets may be hindered. The development of the interbank market can be stymied if banks can borrow more cheaply and easily from the central bank rather than from other banks. Indeed, between 2013 and 2014, interbank market activity contracted by 8 percent. On the other hand, high demand for bank credit from governments risks crowding out the development of consumer and corporate credit markets. Such underdevelopment, in turn, leads the financial sector to be less efficient (with potentially harmful consequences for growth) but also less resilient, since banks rely on one sole provider of liquidity – the central bank.

Figure 4. WAEMU: Interbank Market Activity by Maturity

(Change: 2014 on 2013, in CFA billions and percent)



Source: BCEAO

Macroeconomic policy effectiveness

14. Monetary policy may not be optimally set and the transmission mechanism may be weakened. If the above risks to fiscal and financial stability are material, the cost of tightening monetary policy will be higher when faced with increasing inflationary pressure. And to the extent that elevated levels of central bank lending to commercial banks hinders the development of the interbank market, the transmission of monetary policy will be weakened.³

D. Policy options

15. A reduction in fiscal deficits is likely to be the most effective way of bringing down the elevated level of central bank liquidity provision to commercial banks. Lower fiscal deficits would likely reduce commercial banks' demand for funding from the central bank to finance them. But it would also help to improve the external deficit and hence ease the pressure on banks' liquidity position that results from drawdowns of their foreign exchange holdings.

16. Therefore it is crucial that the authorities implement their planned consolidation plans. According to Staff's current projections, the fiscal deficit would fall to 2.8 percent of GDP and the current account deficit (including grants) to 5.5 percent of GDP by 2019. In the absence of this planned consolidation, monetary policy would have to be tightened to reduce private sector demand in order to preserve external stability.

17. Nevertheless, the WAEMU authorities should monitor closely the provision of central bank liquidity to commercial banks and, in light of the above risks, consider whether a pre-emptive policy response may be required. Such a response could include both monetary, prudential and debt management policies:

Monetary policy

18. The rules governing central bank liquidity operations could be modified in order to discourage carry trade activity by commercial banks. Given the current benign inflation outlook, an increase in the policy rate is inappropriate at this juncture. However, the BCEAO could use more targeted policies, to tighten liquidity only for those banks that have high levels of borrowing from the central bank. For example, the refinancing ratio (the maximum permitted stock of outstanding BCEAO refinancing relative to total assets, applied on an individual bank basis) could be reduced from its current level of 35 percent.

³ In developed financial markets, transmission of official policy rates from the central banks' direct counterparties to the wider financial system typically occurs through the interbank market. Underdevelopment of the interbank market in the WAEMU means this important channel is not fully active.

Prudential policy

19. Market distortions that incentivize banks to invest in government securities could be mitigated through changes in prudential regulation. For example, the capital requirement applied to banks' holdings of government securities could be raised from its current level of zero. The tax exemption relating to interest received on holdings of government securities could also be removed.

20. Regulatory barriers to entry for financial institutions other than domestic banks could be relaxed. An increased market presence of non-bank financial institutions in the WAEMU – both domestic and foreign – could relieve the burden on the domestic banking system to finance government borrowing.

Debt management policy

21. A greater share of public debt could be issued externally. A higher share of public debt held by foreigners would also ease the burden on the domestic banking system to finance government debt and lessen sovereign-bank feedback loops. However, any increase in external debt would need to be consistent with external debt sustainability.

FINANCIAL INCLUSION IN THE WAEMU¹

WAEMU countries lag behind benchmark countries in several dimensions of financial inclusion: Access to finance is low, especially for the most vulnerable parts of the population, and the financial sector appears to only modestly contribute to the population's ability to deal with shocks as well as firms' investment programs. Private sector credit-to GDP ratios, however, appear broadly in line with WAEMU countries fundamentals, and this note points to policies, such as investments in infrastructure and the social sectors, which could help closing these gaps. From the firms' perspective, policies to reduce participation costs in the financial sector and to lower collateral requirements could increase firms' access to financing, and thus significantly boost GDP.

A. Benchmarking Financial Access

1. Financial access in the WAEMU remains comparatively low. Figure 1 compares different indicators of financial access in the WAEMU against a group of fast growing regional and Asian benchmark countries.² It shows that:

- WAEMU countries on average lag behind benchmark groups in the provision of basic financial infrastructure, such as the density of ATMs and the number of bank branches.
- The relative amount of deposit and loans at commercial banks is broadly in line with African benchmark groups, but significantly lower than those in Asian benchmark countries; the number of people with deposits at commercial banks is relatively low.
- The short-comings in financial access are also revealed by enterprise surveys in each WAEMU country, with more than half of respondents identifying access to finance as a major constraint for their businesses.

2. While modest in general, financial access appears to be lowest for the most vulnerable parts of the population (Figure 2). Young adults and the population at the bottom of the income distribution (bottom 40 percent) are the groups with the lowest relative number of bank accounts (less than 5 percent of the respective part of the population), but the population living in rural areas, with less education and women are also less often in the possession of a financial account than the

¹ Prepared by Monique Newiak (AFR) and Rachid Awad (MCM), with valuable contributions from Filiz Unsal, Era Dabla-Norris (both SPR) and Eva Van Leemput (University of Notre Dame). The findings should not be reported as representing the views of the IMF. Section C "Identifying the Most Binding Constraints to Firms' Financial Inclusion" is a part of a research project on macroeconomic policy in LICs supported by UK's Department of International Development (DFID). The findings should not be reported as representing the views of DFID.

² African benchmark countries include: Ghana, Kenya, Lesotho, Rwanda, Tanzania, Uganda, and Zambia. Asian benchmark countries include: Bangladesh, Cambodia, India, Laos, Nepal, and Vietnam. Sub-Saharan Africa is provided as a comparator in many cases as well.

average WAEMU inhabitant. In general, accounts are most often used for business purposes or to receive payments such as wages or remittances.

3. The main modes to access finance and make deposits are similar to those in benchmark countries, but several payment methods are less pronounced in the WAEMU

(Figure 3). As in benchmark countries, the use of a bank teller is the main way to make a deposit. Checks and electronic payments, however, are much less developed modes of payments than in the comparator groups, and a much smaller share of the WAEMU's population is in the possession of a credit or debit card. The following note provides a separate benchmarking exercise for the use of mobile payments.

4. The use of loans and purposes of saving points to relatively weak social protection and only a modest contribution of the financial sector in shock mitigation (Figure 4).

While the share of the population with outstanding loans for educational fees is comparable to benchmark countries, the share indebted people due to health issues or other emergencies is relatively high in the WAEMU. The population appears relatively less covered by health insurance and, with the exception of Mali, by agricultural insurance. Less people (are able to) save for emergencies in the future. While pointing to absolute and relative weaknesses in social protection, these indicators also suggest that the financial sector does only provide insufficient help to the population to insure against or deal with shocks.

5. The banking sector's contribution to firms' investment programs also appears limited

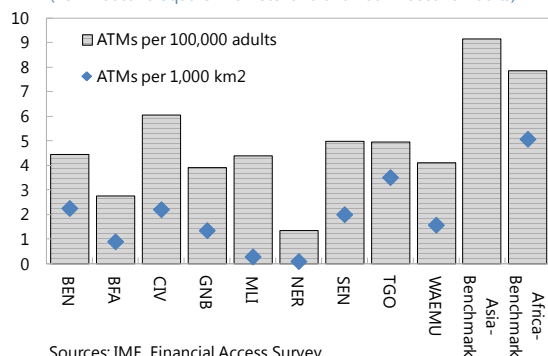
(Figure 5). Enterprise surveys indicate that, while most firms possess a bank account, less than 30 percent of firms access a loan or a line of credit in most WAEMU countries. The majority of loans require collateral. The value of such collateral on average exceeds the value of the loan, indicating problems with the liquidation of the collateral. Loans from banks constitute only a small fraction of firms' investment financing, while internal funds appear to be the main source of financing investments.

Figure 1. WAEMU: Financial Access

The Penetration of ATMs remains comparatively low in the WAEMU on average, and ...

Number of ATMs, 2013

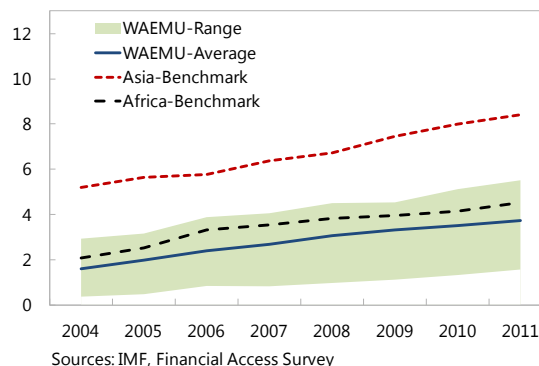
(Per Thousand Square Kilometer and 100 Thousand Adults)



... the number of branches remains comparatively low even for the WAEMU country with the highest branch density.

Commercial Bank Branches

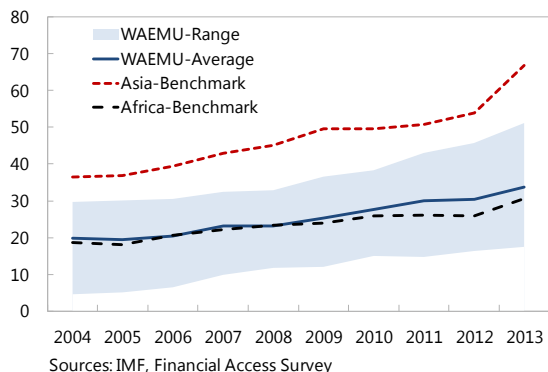
(Per 100 Thousand Adults)



Though far exceeded by Asian benchmarks, deposit ratios are on average in line with SSA benchmark countries...

Outstanding Deposits with Commercial Banks

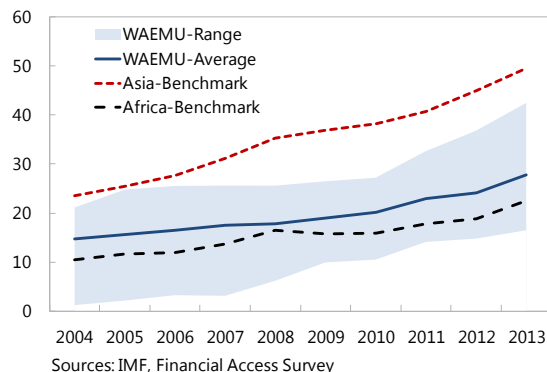
(In Percent of GDP)



...and loan ratios are somewhat higher than for the average SSA benchmark country.

Outstanding Loans from Commercial Banks

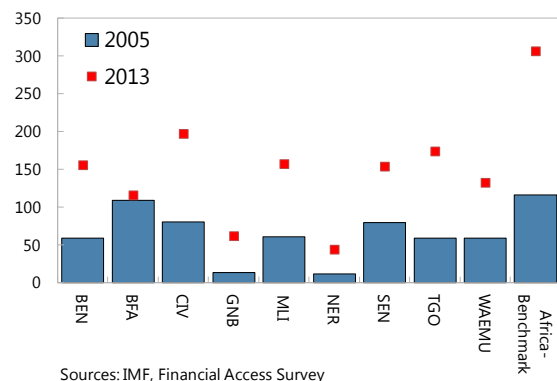
(In Percent of GDP)



The share of the population with deposits at commercial banks has increased, but remains relatively low.

Depositors with Commercial Banks

(Per Thousands of Adults)



Most firms consider access to finance as a major constraint.

Percent of Firms Identifying Access to Finance as Major Constraint

(In Percent of Respondents)

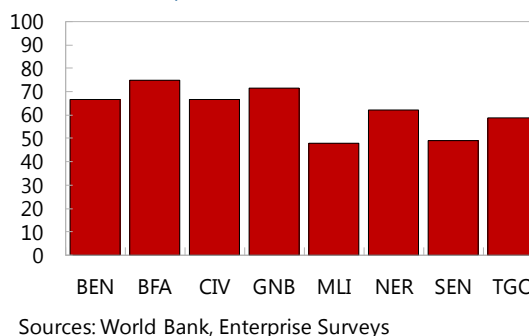
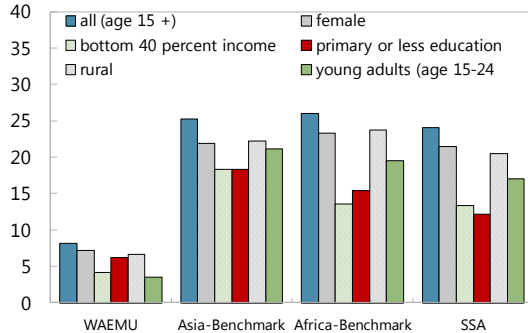


Figure 2. WAEMU: Demographical Characteristics of Financial Access

Gaps in financial access compared to benchmarks are largest for young adults and lower income groups.

Account at Formal Financial Institution

(In Percent of Respective Group)

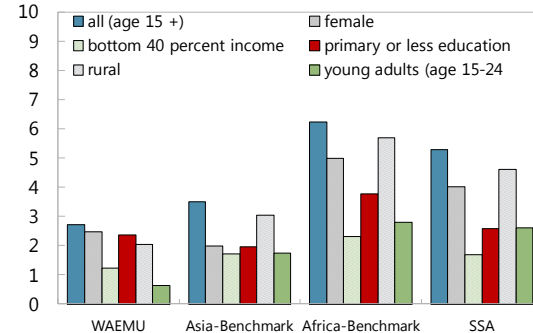


Sources: Findex, 2011.

Accounts are mainly used for business purposes.

Account Used for Business Purposes

(In Percent of Respective Group)

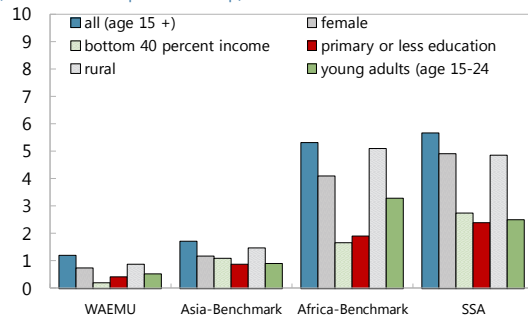


Sources: Findex, 2011.

Accounts are also used to receive government payments...

Account Used to Receive Government Payments

(In Percent of Respective Group)

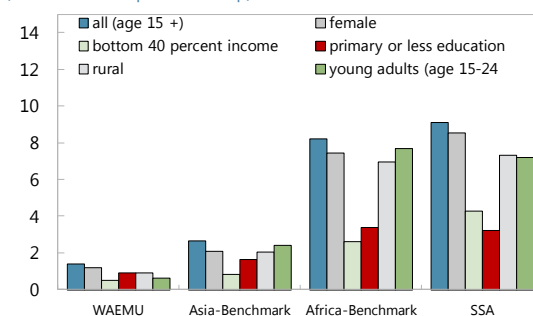


Sources: Findex, 2011.

... to receive remittances...

Account Used to Receive Remittances

(In Percent of Respective Group)

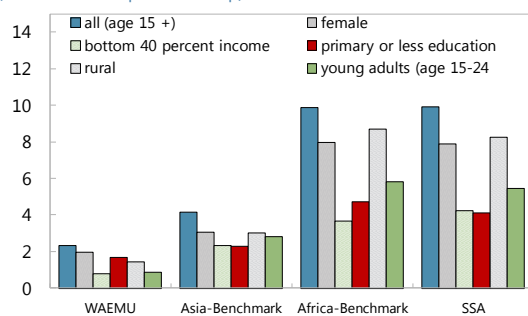


Sources: Findex, 2011.

... wages, or...

Account Used to Receive Wages

(In Percent of Respective Group)

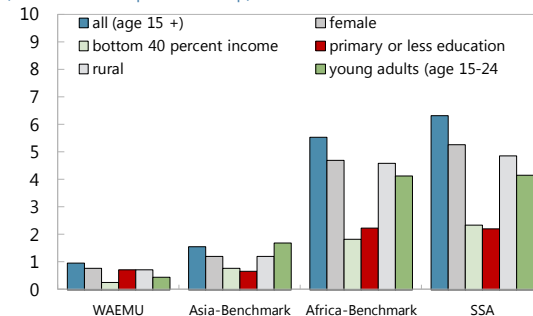


Sources: Findex, 2011.

...to send remittances, with some upside potential.

Account Used to Send Remittances

(In Percent of Respective Group)



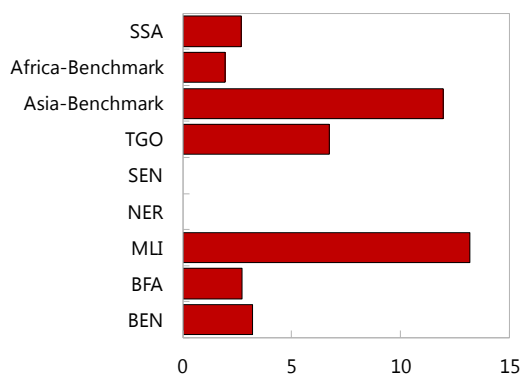
Sources: Findex, 2011.

Figure 3. WAEMU: Deposit and Payment Modes

The frequency of use of a bank agent to make deposits is comparable to African peers...

Bank Agent is the Main Mode of Deposit

(In Percent with an Account, 15+)

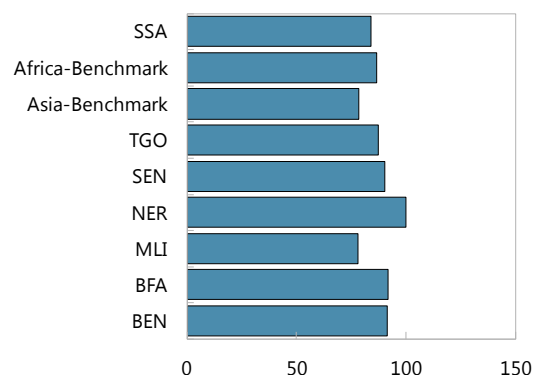


Sources: Findex 2011.

... and the use of a bank teller for deposits is dominant for both WAEMU and comparator groups.

Bank Teller is the Main Mode of Deposit

(In Percent with an Account, 15+)

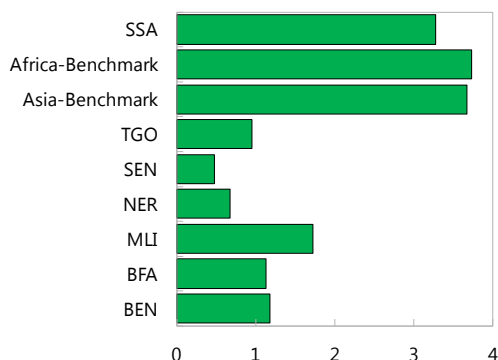


Sources: Findex 2011.

Mali is closest in its use of checks to benchmarks groups.

Checks Used to Make Payment

(In Percent, Age 15+)

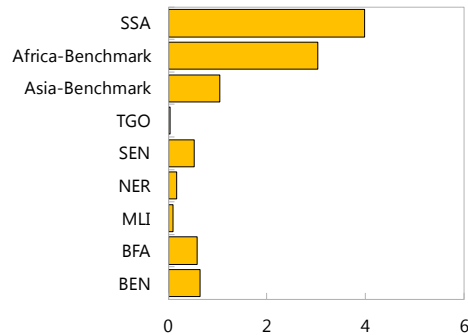


Sources: Findex 2011.

Electronic payments are rare.

Electronic Payment Used to Make Payment

(In Percent, Age 15+)

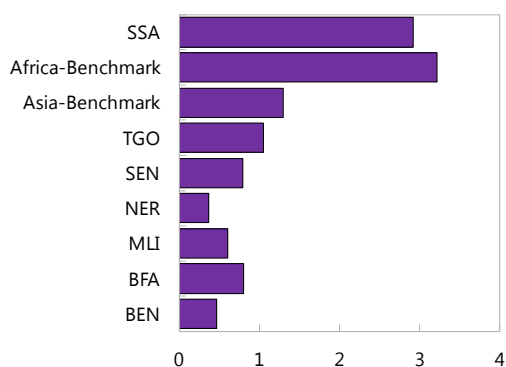


Sources: Findex 2011.

Less than one percent of the population has access to a credit card in the WAEMU.

Possession of Credit Card

(In Percent, Age 15+)

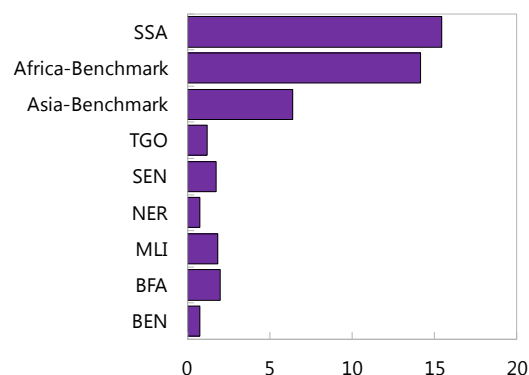


Sources: Findex 2011.

The access to debit cards is somewhat higher, but still significantly below that of peers.

Possession of Debit Card

(In Percent, Age 15+)

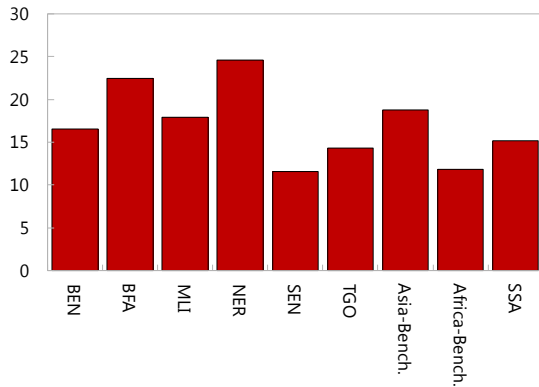


Sources: Findex 2011.

Figure 4. WAEMU: Use of Loans

The share of the population with loans for health or emergencies is comparatively high in the WAEMU...

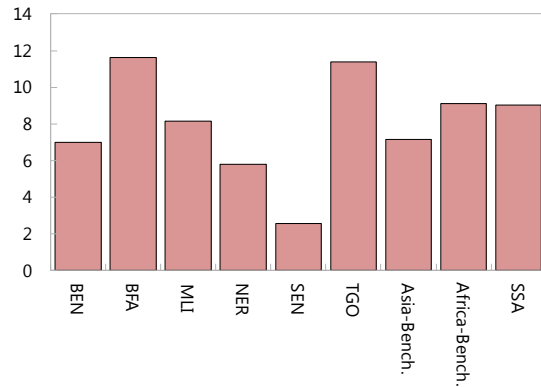
Outstanding Loan for Health or Emergencies
(In Percent, Population 15+)



Sources: Index. 2011.

... while outstanding loans for education are in line with comparator groups.

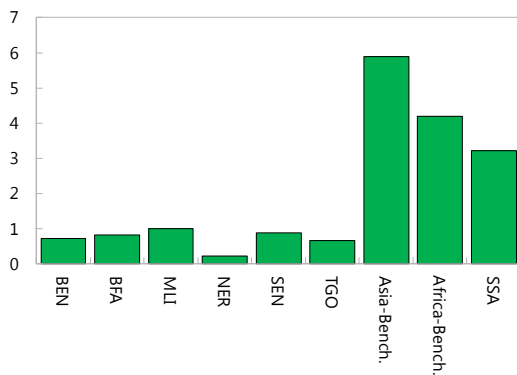
Outstanding Loan for School Fees
(In Percent, Population 15+)



Sources: Index. 2011.

Coverage by health insurance is low...

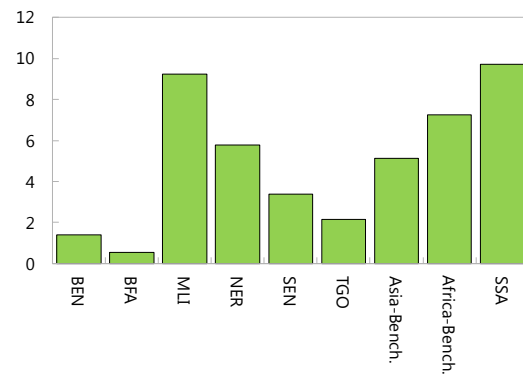
Personally Paid for Health Insurance
(In Percent, Population 15+)



Sources: Index. 2011.

...and insurance against agricultural shocks is less prevalent on average than in benchmark countries.

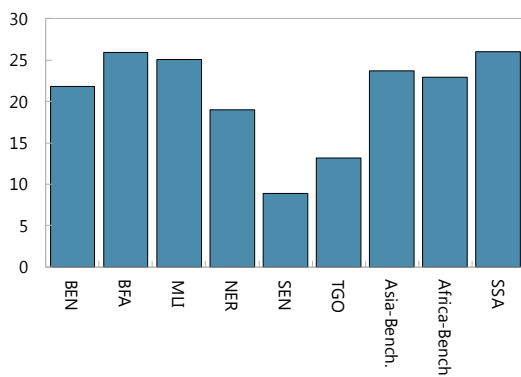
Bought Agricultural Insurance
(In Percent, Population 15+)



Sources: Index, 2011.

A large part of the population saves for future expenditures, ...

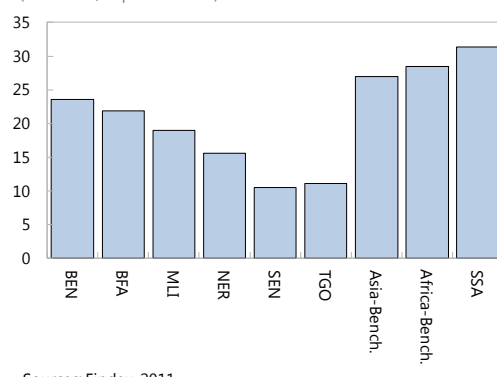
Saved for Future Expenses in the Past Year
(In Percent, Population 15+)



Sources: Index, 2011.

... in particular those which could be related to an emergency.

Saved for Emergencies in the Past Year
(In Percent, Population 15+)



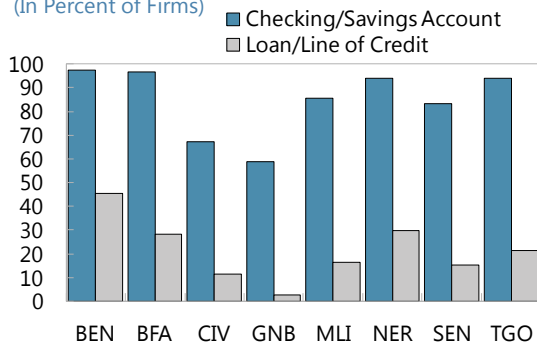
Sources: Index. 2011.

Figure 5. WAEMU: Firms

While most firms have an account at a bank, access to credit is low, ...

Firms with Accounts or Credit

(In Percent of Firms)

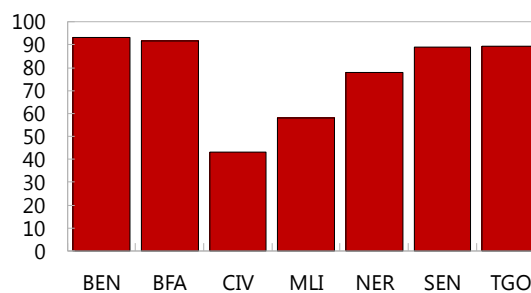


Sources: World Bank, Enterprise Surveys

... and in most WAEMU countries, almost all loans require collateral.

Loans Requiring Collateral

(In Percent of Loans)

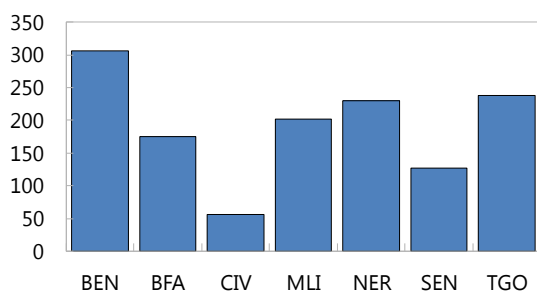


Sources: World Bank, Enterprise Surveys

The value of the collateral often significantly exceeds the value of the loan.

Value of Collateral Needed

(In Percent of Loan Amount)

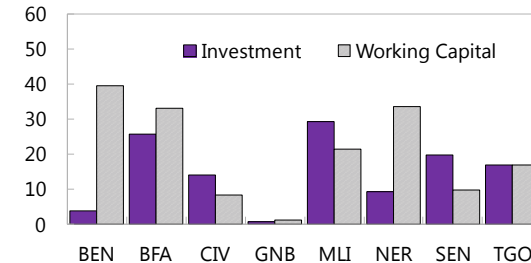


Sources: World Bank, Enterprise Surveys

Less than half of the firms rely on banks to finance investment or their working capital.

Firms Using Banks to Finance Investment and Working Capital

(In Percent of Firms)

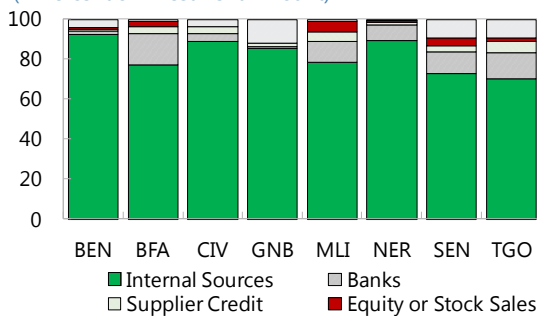


Sources: World Bank, Enterprise Surveys

Most investment financing is generated through internal sources, ...

Sources to Finance Investment

(In Percent of Investment Amount)

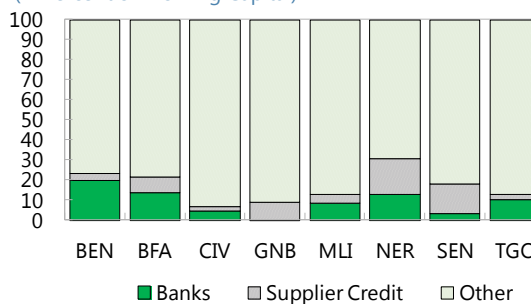


Sources: World Bank, Enterprise Surveys

...while the amount of working capital contributed through banks is relatively small.

Sources to Working Capital

(In Percent of Working Capital)

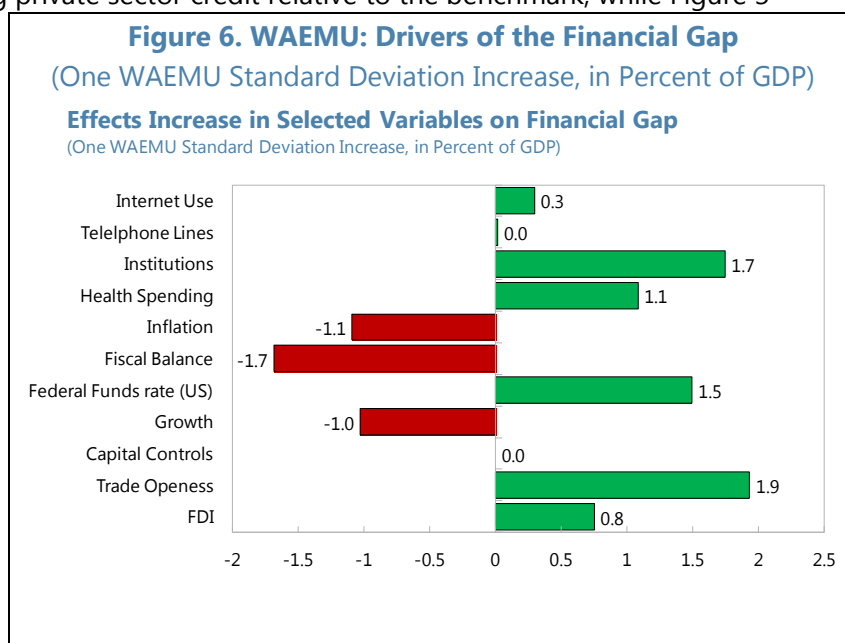


Sources: World Bank, Enterprise Surveys

B. Explaining Private Sector Credit Gaps

6. Private sector credit to GDP ratios are broadly in line with the benchmark for the WAEMU on average, but there are variations across countries (Figure 7). Following the methodology in Al Hussainy (2011) and Barajas et al. (2013), this note estimates a benchmark ratio of private sector credit to GDP based on a number of structural factors in a panel of over 120 emerging and developing countries for the period from 1986 to 2013.³ The fitted values from these regressions serve as the private sector-to-GDP benchmark. While generally following the dynamics of the benchmarks well, actual credit-to-GDP has been lower than the benchmark in 2013 in four countries (Benin, Burkina Faso, Côte d'Ivoire, and Guinea-Bissau), higher in three (Mali, Niger, Togo), and broadly consistent with the benchmark in Senegal.

7. A number of policies could help countries to increase private sector credit relative to the benchmark (Figure 6, Table 1). In the next step, a regression of the financial gap (actual private sector credit-to-GDP minus its benchmark) on macroeconomic, institutional and policy variables helps identifying the drivers of the deviations from the benchmark for 2004-2013. Table 1 highlights the factors which help increasing private sector credit relative to the benchmark, while Figure 3 depicts the change in the private sector credit-to-GDP relative to the benchmark if these underlying factors are changed by one standard deviation.⁴ Factors which relate positively to private sector credit-to-GDP include trade openness and FDI inflows on the external side; lower inflation and higher social and educational spending on the macroeconomic (policy) side, as well as better infrastructure and institutions (here ICRG index).⁵



³ It regresses the ratio of private sector credit-to-GDP on: (i) the log of GDP per capita and its square, (ii) the log of the population to proxy for market size, (iii) the log of population density to proxy for the ease of service provision, (iv) the log of the age dependency ratio to account for demographic trends and the related savings behavior, (v) an oil exporters dummy, and time dummies to control for global factors.

⁴ Standard deviation calculated over WAEMU country time series from 2004 to 2013.

⁵ ICRG: International country risk guide.

Figure 7. WAEMU: Credit to the Private Sector
(As a Share of GDP)

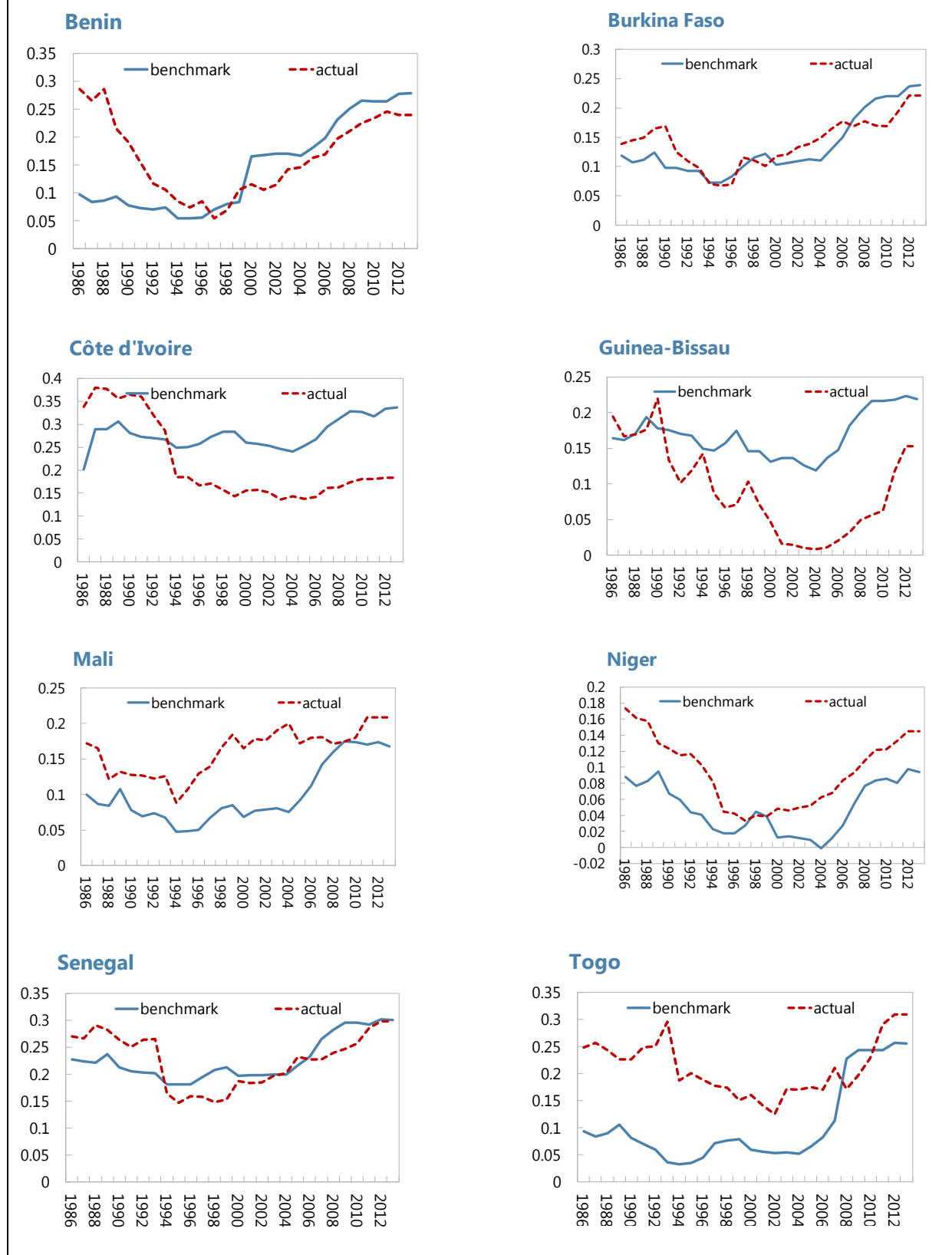


Table 1. WAEMU: Determinants of Financial Inclusiveness Gaps, 2004-2013

	(1)	(2)	(3)	(4)	(5)
<u>Economic Environment</u>					
Growth	-0.004 *** (-3.08)				-0.004 *** (-3.04)
US Federal Funds Rate ¹	0.003 (0.69)				0.008 ** (2.17)
<u>External Stance</u>					
FDI/GDP		0.002 *** (2.92)			0.002 *** (3.17)
Trade Openness		0.209 *** (3.49)			0.217 *** (3.40)
Capital Controls		0.076 *** (3.96)			0.115 *** (5.73)
<u>Policies</u>					
Fiscal Balance (cycl. adjusted)/GDP			-0.185 ** (-2.16)		-0.247 ** (-2.52)
Inflation			-0.004 *** (-5.50)		-0.003 *** (-4.48)
FX Regime			0.007 (1.15)		
Health Spending/GDP			1.575 *** (3.61)		1.202 *** (2.57)
<u>Institutions and Infrastructure</u>					
Institutions (ICRG)				0.295 *** (4.38)	0.234 *** (3.14)
Telephone Lines				0.000 *** (11.44)	0.000 *** -11.74
Internet Use				0.001 ** (2.01)	0.001 * (1.75)
Credit Information Depth				-0.002 (-0.69)	
Constant	0.019 * (1.76)	-0.119 *** (-5.03)	-0.033 (-1.17)	-0.183 *** (-5.74)	-0.308 *** (-7.38)
Number of observations	1055	1055	1055	1055	1055
R-squared	0.01	0.04	0.04	0.09	0.18

¹Proxy for external environment.

Robust t-statistics in parentheses; significance levels at 10 percent (*), 5 percent (**), and 1 percent (***) levels, respectively.

C. Identifying the Most Binding Constraints to Firms' Financial Inclusion⁶

8. A micro-founded general equilibrium model helps identifying the most binding constraints to financial inclusion from firms' perspective. In this section, the micro-founded general equilibrium model by Dabla-Norris et al. (2015) is calibrated to quantify the most binding constraints to financial inclusion and, as a consequence, growth, productivity and a more equal income distribution. Agents in the model differ from each other in wealth and talent and can choose to become entrepreneurs or supply labor for wages. They face three financial frictions:

- Participation costs ψ which limit access to credit, in particular for smaller and poorer entrepreneurs
- Intermediation costs χ due to asymmetric information between banks and borrowers which result in deposit-lending spreads
- Imperfect enforceability of contracts which results in collateral requirements and thus smaller collateral leverage ratios λ .

To determine the values of the parameters ψ , χ and λ , as well as other parameters for the calibration, a range of macroeconomic and financial indicators are fed into the model (Table 2).

Table 2. WAEMU: Target Moments

Savings (in Percent of GDP)	14.5
Collateral (in Percent of Loan Value)	170
Firms with Credit (in Percent of Firms)	20
Non-Performing Loans (in Percent of Loans)	17
Interest Rate spread	7.4

9. Preliminary results point to participation costs and high collateral requirements as the main borrowing constraints on average in the WAEMU.

Based on calibration, Figures 7-9 depict the effects of relaxing individually each of the three financial constraints on the number of firms accessing credit, GDP, productivity, income inequality, interest rate spreads and the NPL ratio. They suggest that, while both lower participation costs and lower collateral requirements could yield significant GDP gains, they have differentiated effects on other variables, in particular:

- *Increasing financial access* (Figure 8): Lowering participation costs, such as transaction costs, institutional impediments, and bureaucratic hurdles, could increase the fraction of firms with credit substantially. With more access to credit which leads to higher investments GDP increases significantly. From the WAEMU's current position, lower participation costs could also decrease income inequality as measured by the Gini coefficient, because previously constrained (less wealthy) entrepreneurs over-proportionately benefit from the change when they enter the market. Overall productivity may decline for the same reason.

⁶ We thank Eva Van Leemput for providing the calibrations.

- *Lowering collateral constraints* (Figure 10). Policies which could help decrease collateral requirements, such as the introduction of collateral registries, could also yield large GDP gains and increase productivity through gains in efficiency. The latter effect differs from the impact of policies which increase financial access described above as it over-proportionately benefits more talented entrepreneurs. While relaxing the collateral constraints allows all firms to borrow more, less talented businesses do not scale up their businesses by the same magnitudes as their maximum business scale is sooner achieved. As a consequence, the policy may lead to an increase in income inequality.

Figure 8. WAEMU: Lowering Participation Costs
(from left to right, dot indicates initial position)

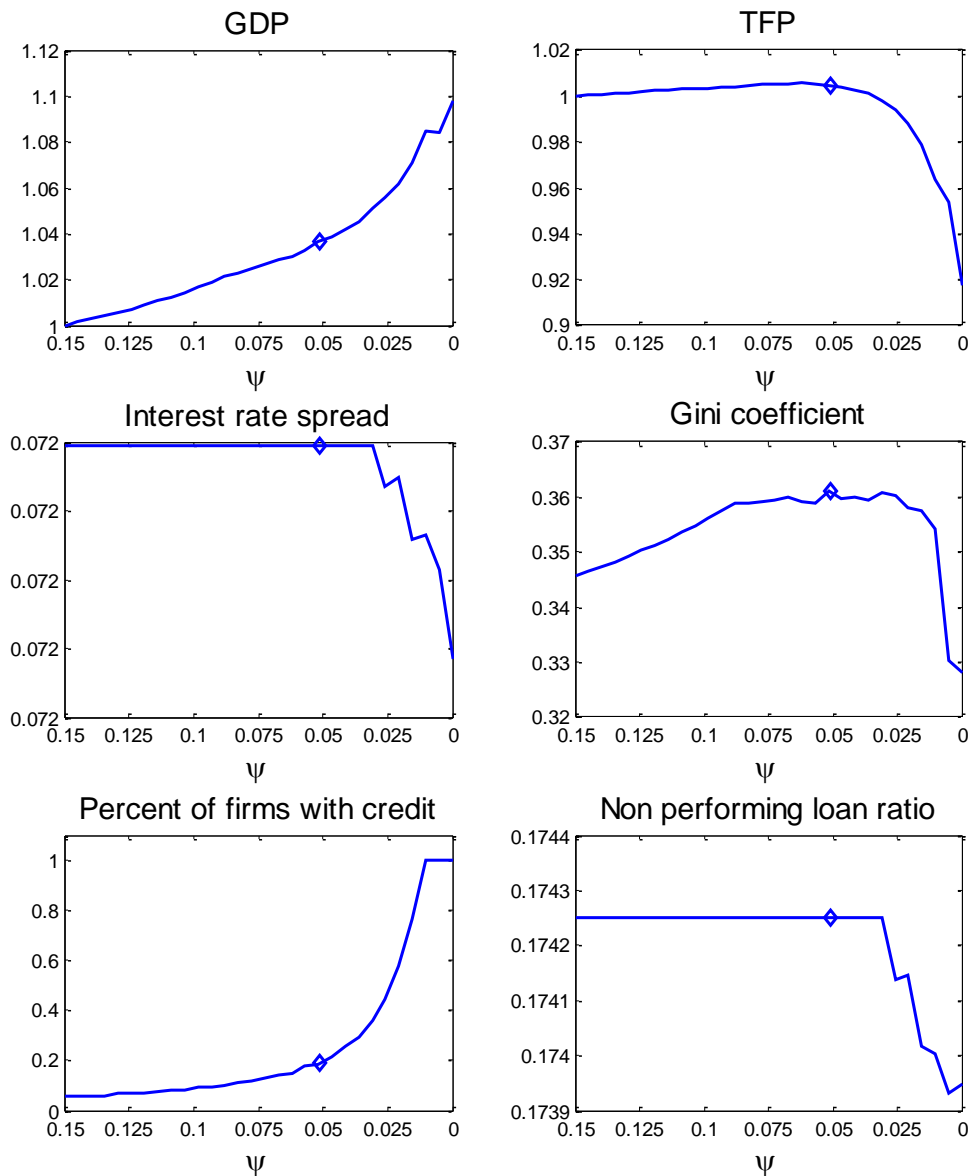


Figure 9. WAEMU: Lowering the Cost of Intermediation

(from left to right, dot indicates initial position)

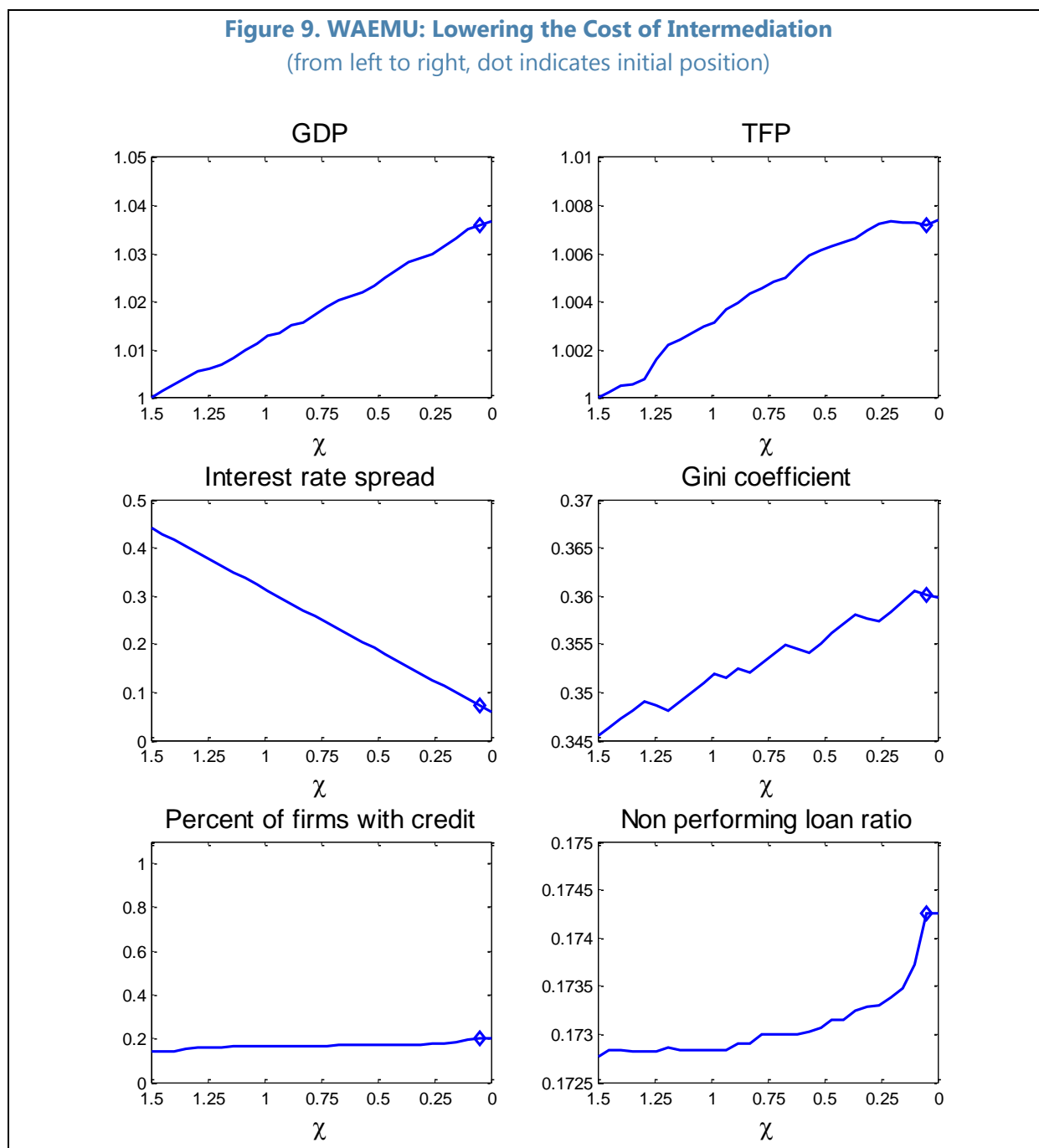
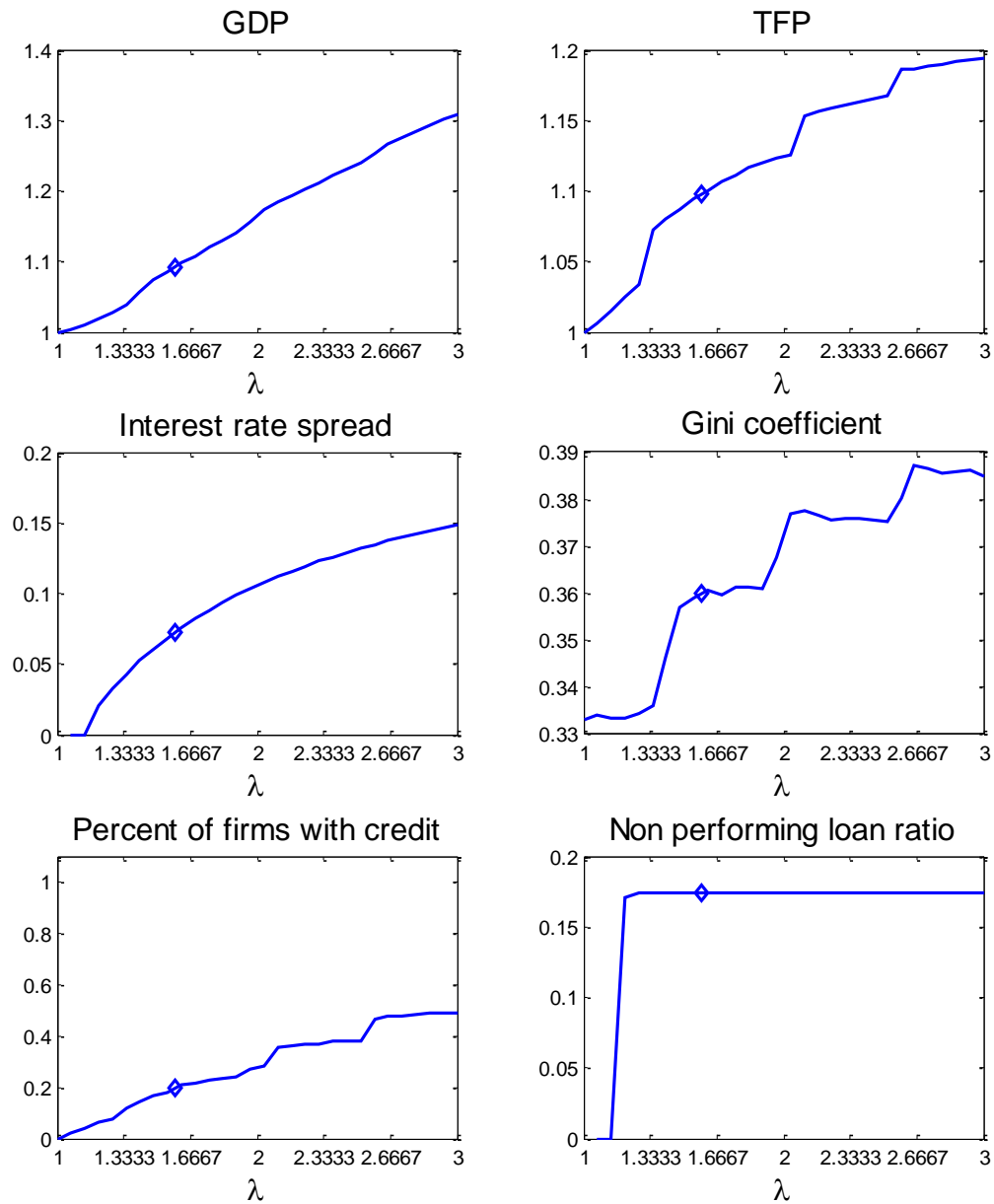


Figure 10. WAEMU: Lowering Collateral Constraints

(from left to right, dot indicates initial position)



References

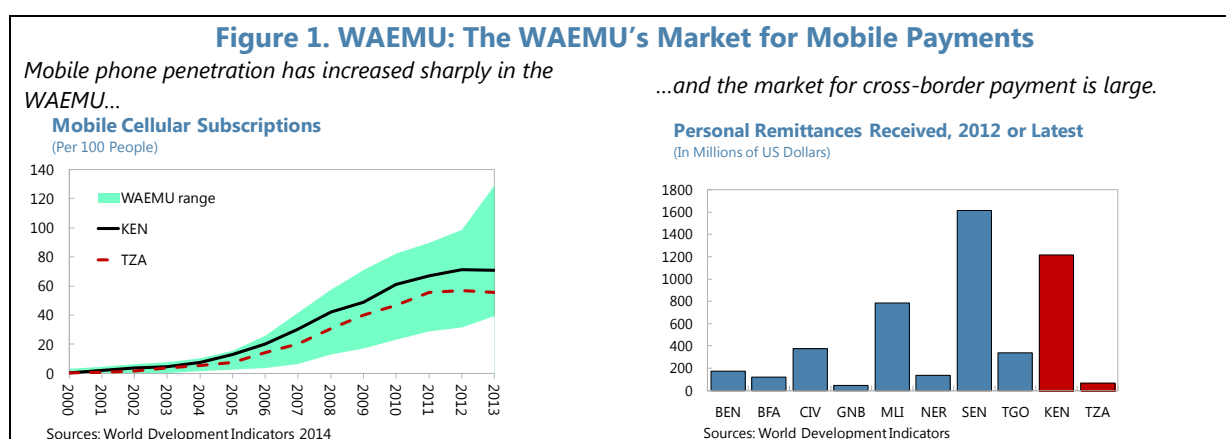
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MOBILE PAYMENTS IN THE WAEMU¹

With relatively high mobile phone penetration and a large market for cross-border payments in the WAEMU, the expansion of mobile payment services offers a significant opportunity to increase the region's financial inclusion. This note first benchmarks the stance of mobile payments in the WAEMU to countries, such as Kenya and Tanzania. It highlights transaction costs, issues of network interoperability, and legal and regulatory barriers as possible constraints to the market's development in the WAEMU. An overview of oversight issues on mobile payments provides the key pillars necessary to safeguard stability: minimum market entry requirements, financial integrity controls, funds safeguards, and payment stability.

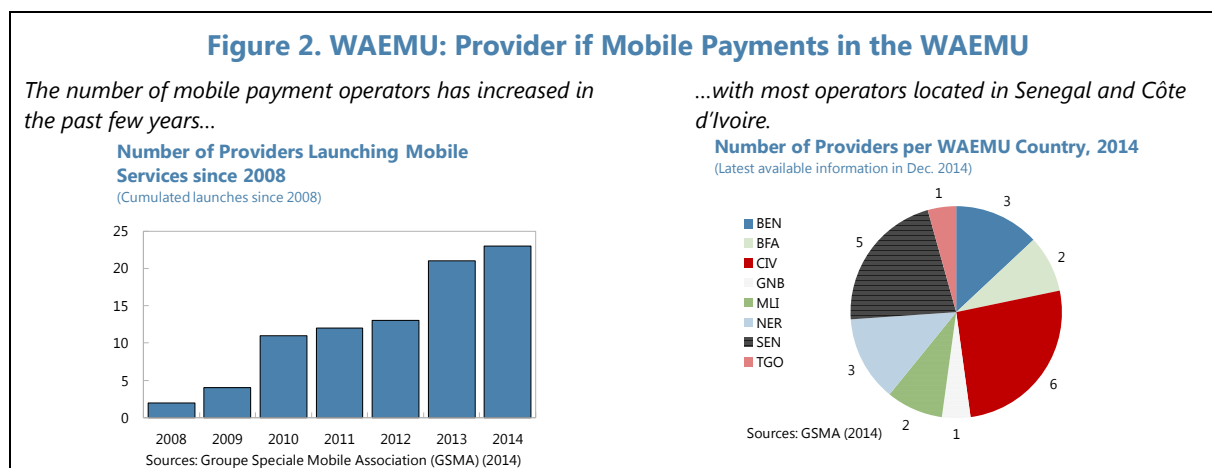
A. Introduction

1. As conventional financial infrastructure is still limited, but mobile phone penetration is high, mobile payments could boost financial inclusion in the WAEMU (Figure 1). Financial access in the WAEMU remains low: only about 13 percent of the population has deposits at a commercial bank, less than one third of firms access credit, and payment methods, such as checks, the use of credit and debit cards, and electronic payments in general are much less developed relative to benchmark countries (preceding note). However, while direct contact with financial infrastructure remains low, in particular for the most vulnerable parts of the populations, mobile phone penetration has increased rapidly in the WAEMU over the last decade. In some WAEMU countries, it even exceeds mobile phone penetration in countries which have pioneered mobile payments, such as Kenya and Tanzania. The development of mobile financial services could thus serve as a means to increase financial inclusiveness.



¹Prepared by Rachid Awad and Monique Newiak.

2. The market for mobile payments in the WAEMU appears large, in particular for cross-border payments, and has increasingly attracted operators in the last few years (Figure 2). In addition to a large unbanked population, the magnitude of remittances in the region suggests a substantial market for cross-border mobile payments. Providers appear to have responded to the large demand in the region, as the number of mobile payment operators has more than doubled since 2010, with most of the providers now operating in Côte d'Ivoire and Senegal.



3. A series of initiatives have been taken by the BCEAO to promote the mobile payment sector in the last decade. In order to promote the use of non-cash payment instruments, the BCEAO has enacted an e-money law in 2006 requiring financial institutions to make full use of electronic money. In 2012, to unlock the mobile money market, it embarked on an extensive assessment process: (i) visiting other countries in which mobile payment services are more successful, such as Kenya and the Philippines to draw lessons from their approaches; (ii) hosting a regional consultation conference to explore how to develop further mobile money across WAEMU, such as streamlining the licensing process, avoiding increases in minimum capital requirements, allowing greater simplification of account openings, and developing financial education programs for the wider public; and (iii) undertaking a study to gain a more informed understanding of how citizens use formal, semi-formal and informal financial services.

4. The volume of mobile payments has grown recently but remains lower than in benchmark countries, especially for the most vulnerable parts of the population. Mobile payments have expanded rapidly over the last years: In the period between December 2013 and September 2014, the number of existing accounts has increased by 35 percent to 17 million. In the same period, the number of transactions has increased by more than 40 percent to almost 179 million and a transaction value of 2,445 billion FCFA (about 5 percent of 2014 GDP). However, the usage of informal channels of cash based money transfers remains dominant, and the provision of mobile financial services has been far lower than in benchmark countries, such as Tanzania and Kenya. Latest available indicators suggest that mobile payments have been less accessed by the more vulnerable parts of the population, such as the bottom 40 percent of the income population, the population living in rural areas, or females (Figure 3).

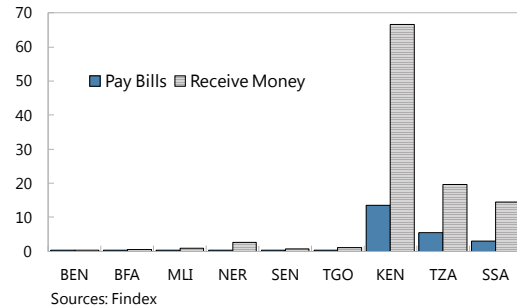
5. This note. First, the note points to possible impediments to mobile payments in the region. It then highlights the essential pillars to safeguard stability in the mobile payments sector.

Figure 3. WAEMU: Mobile Banking Across Demographical Groups, 2011

Mobile payments are less common in the WAEMU than in other parts of Sub-Saharan Africa.

Mobile Phone Used to Pay Bills/Receive Money, 2011

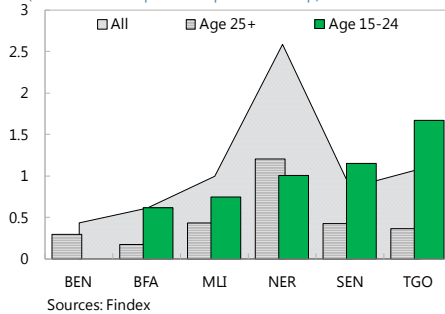
(In Percent of Population Age 15+)



The use among different age groups varies across the region

Mobile Phones Used to Receive Money, 2011

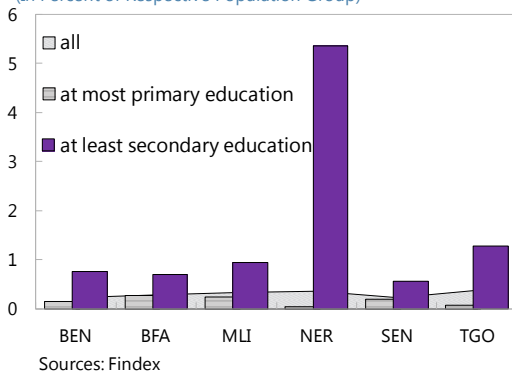
(In Percent of Respective Population Group)



... in lower educational groups, ...

Mobile Phones Used to Pay Bills, 2011

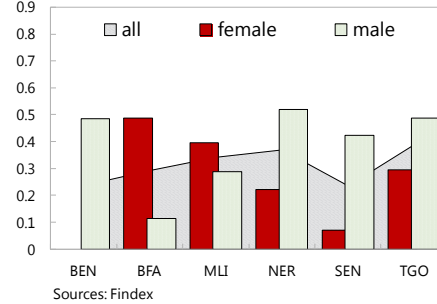
(In Percent of Respective Population Group)



Mobile services are more often used by men than women.

Mobile Phones Used to Pay Bills, 2011

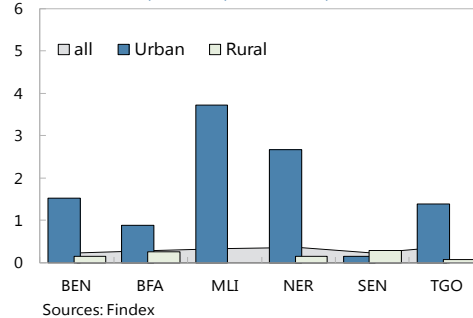
(In Percent of Respective Population Group)



The use of mobile payments is underdeveloped in rural areas, ...

Mobile Phones Used to Pay Bills, 2011

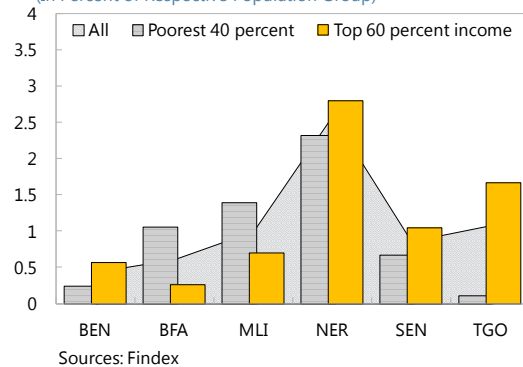
(In Percent of Respective Population Group)



... and among the poorest parts of the population.

Mobile Phones Used to Receive Money, 2011

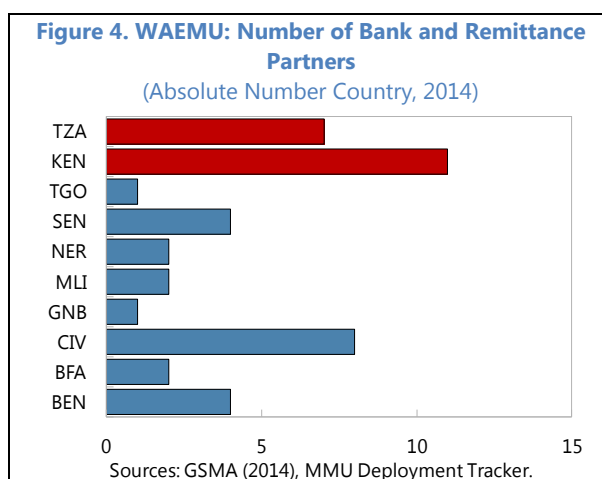
(In Percent of Respective Population Group)



B. Possible Impediments to Mobile Payments in the WAEMU

6. The following factors may be impeding the development of the mobile payments sector in the WAEMU:

- **Cost** (Figure 5). The relatively high cost of using electronic payment services, especially for smaller transaction, appears to make mobile payment services unattractive for the population at the lower end of the income distribution. In particular, Figure 4 highlights for selected operators in the WAEMU, that the cost of making an in-network transfer are particularly high relative to the transaction amount for smaller transaction (up to 10 USD). These costs may be related to the high cost incurred by mobile service providers investing in networks and access points.
- **Intermediation** (Figure 4). The current regulatory framework for providing payment services in WAEMU requires some form of intermediation by banks. This may be limiting the room for innovation and making it difficult for new players to compete with banks. It may also be contributing to the increasing costs of mobile payment services due to the fees associated with bank intermediation. In contrast, Kenya and other countries which have witnessed a rapid growth in use of mobile payment services have adopted nonbank-led models. These countries have also been partnering up with an on average larger group of banks and remittance partners.
- **Number of services and interoperability** (Figure 6). Most providers in the WAEMU offer basic transfer and bill payment services. Other services such as international remittances, a link to other banking products, mobile micro-insurance and loan disbursements and payments, however, are still less developed than in benchmark countries. While the potential for cross-border transaction is high, it not explored by most providers. Such services would require interoperability among different service networks, a feature which appears to be still relatively weak in the WAEMU, inter alia owing to regulatory constraints. For example, payment system providers are licensed on a national basis, making it difficult to expand into other WAEMU countries. Newer services, such as mobile loan disbursements and micro-insurance are not yet developed in the WAEMU.



Box 1. WAEMU: Kenya's M-PESA Experience (based on IMF, 2012)

The fast spread of M-Pesa after its introduction in Kenya in 2007 has helped reduce transaction cost, facilitated personal transaction, and contributed to the use of services of financial intermediaries. Based on IMF (2012), this box summarizes the main determinants of M-Pesa's success as well as risk management issues.

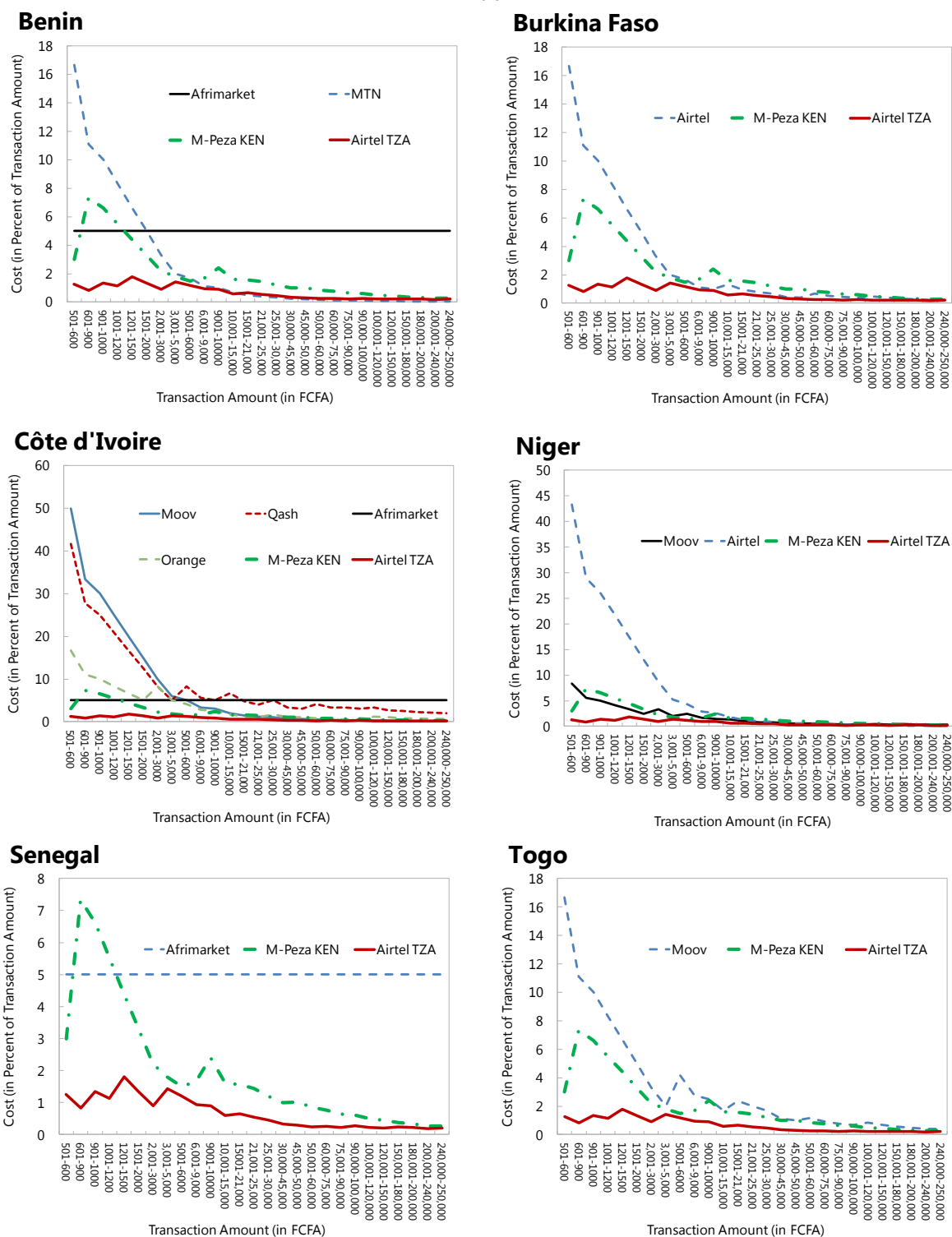
Determinants of M-Pesa's success. While a rapid expansion in the use of mobile phones has contributed to the success of the developments of the sector, the following structural factors have likely made it possible:

- *Inexpensive and flexible use of technology.* Safaricom's widespread presence brought with it a large network of airtime resellers which became M-Pesa agents. Based on physical locations, agents are organized into groups with or without a centralized aggregator, such as a bank.
- *Macroeconomic environment.* Unusually large excess reserves held by commercial banks at the central bank led to the search for alternative lines of business.
- *Banking infrastructure.* The increasing availability of bank branches favored mobile-based transfers.
- *Government policies.* The Central Bank of Kenya (CBK) allowed Safaricom to operate M-Pesa as a parallel payments system, requiring only that customers' funds be deposited in a regulated financial institution, while Safaricom deposits and earned interest are placed in a non-profit trust account. The CBK also introduced limits on transaction sizes to mitigate money laundering risks.

Risk management issues. Advice for risk-prevention for M-Pesa by the Fund and actions taken included:

- *A formalization of M-Pesa operations in the National Payments Systems Bill* to provide a legal basis for M-Pesa operations and ensure customer protection, even if not linked to a deposit account.
- *Coverage of operational risks* through regulations addressing in detail the technological capabilities and control processes to ensure security.
- *Explicit incorporation of credit, liquidity and operational risks associated with M-Pesa transfers for microfinance institutions as well as consumer protection.*
- *Close monitoring of risks related to cross-border mobile payments.*

Figure 5. WAEMU: Transaction Cost for Selected Providers
(In Network Transfer, Cost Calculated on Upper-Bound Amounts of Transaction Grid)



Source: Companies' Websites.

Figure 6. WAEMU: Mobile Service Provided in the WAEMU, Kenya and Tanzania

		P2P transfer (Domestic)	Bill payment	other bulk payment	airtime top up	Merchant Payment	International Remittances	link to other banking products	Mobile microinsurance	Loan disbursement or repayment
BEN	Afrimarket					x	x			
	Flooz	x	x		x	x		x		
	MTN Mobile Money	x	x	x	x	x	x			
BFA	Airtel Money	x	x	x	x					
	Inovapay	x	x	x	x	x	x		x	
CIV	Afrimarket Cote d'Ivoire					x	x			
	Celpaid Cote d'Ivoire	x	x	x	x					
	Flooz	x		x	x	x				
	MTN Mobile Money	x	x	x	x	x	x			
	Orange Money	x	x	x	x	x		x		
	Qash Mobile Banking	x	x		x		x			
GNB	MTN Mobile Money	x	x		x	x				
MLI	MobiCash									
	Orange Money	x	x		x	x	x			
NER	Airtel Money	x	x	x	x	x				
	Flous	x	x		x	x		x		
	Orange Money	x	x		x	x				
SEN	Afrimarket Senegal					x	x			
	Orange Money	x	x	x	x	x				
	Tigo Cash	x			x					
	W@ri	x			x					
	Yoban'tel	x	x	x			x			
TGO	Flooz	x	x		x	x				
KEN	Agrilife		x	x						
	Airtel Money	x	x	x	x	x		x		x
	M-PESA	x	x	x	x	x	x	x		x
	Orange Money	x	x	x	x			x		
	Tangaza Pesa Mobile Money Transfer	x	x	x	x					x
	Yucash	x	x		x					
TZA	Airtel Money	x	x	x	x					
	ezyPesa	x			x	x				
	Tgo Pesa	x	x	x	x		x			
	Vodacom M-pesa	x	x	x	x	x	x		x	

Source: GSMA 2014), MMU Deployment Tracker.

C. Oversight Issues in Mobile Payments

7. **Mobile payment services promote financial inclusion, but they carry a number of risks which may be mitigated by an oversight framework with the following components:**

- *Minimum entry requirement into the sector.* Entry requirements, such as minimum capital requirements for non-bank mobile service providers, will help reduce the risk of failure because operators will have to demonstrate that they have the financial capacity to supply mobile payment services. Such protection is particularly important given that mobile payment services are mostly addressed to the most vulnerable parts of the population.
- *Financial integrity controls.* Mobile payments may increase the complexity of payments and give rise to money laundering and financing of terrorism risks. Therefore, these services should be subject to adequate anti-money laundering/combating terrorism financing (AML/CFT) risk-based supervision by the WAEMU Banking Commission. Their providers should effectively implement AML/CFT preventive measures and report suspicious transactions to financial intelligence units.
- *Fund safeguarding.* As mobile payment services address mostly people at the lower end of the income distribution, they should include some form of guarantee or insurance to cover funds in case of failure of the mobile financial service provider. Such guarantee can be in the form of coverage by insurance companies or the inclusion of these services within the scope of deposit insurance schemes applicable in some countries.
- *Operational resiliency.* Mobile payment services may run substantial operational risk, particularly when functioning under poor or limited infrastructure. Therefore, mobile payment providers' business continuity plans should be regularly tested for viability and effectiveness.
- *Payment system stability.* The high number of transactions connected with mobile payments may create settlement risk which might translate into both liquidity and credit risks potentially affecting financial stability. Therefore, mobile payment services, particularly those performed by non-banks, should be subject to a very robust clearance and settlement system leveraging on the system used for bank transactions.

D. Main Conclusions

8. Subject to a strong oversight framework, the development of mobile financial services in the WAEMU should be promoted further. Mobile payment services have been picking up in WAEMU, but there is potential for a further expansion. Policies should be targeted at reducing cost, in particular for small transaction amounts. Policies which favor the expansion of interoperability between networks could further open the market for cross-border payments. To safeguard stability, such development of mobile payment services should go hand in hand with measures to strengthen the oversight framework.

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GROWTH, STRUCTURAL TRANSFORMATION, AND DIVERSIFICATION IN THE WAEMU¹

Growth in the WAEMU in the past has been disappointing and highly volatile compared to growth in a group of benchmark countries. The region's economies remain highly exposed to exogenous shocks, such as droughts. This note examines slow structural transformation and diversification as candidate explanations for this relative underperformance: The majority of the region's population is employed in low-productivity agriculture and the secondary sector is underdeveloped. Further structural transformation and diversification of output and exports could yield significant growth dividends, but will be challenging in the context of a rapid projected increase the workforce over coming decades, much of which would need to be absorbed by the agricultural sector. Policies could focus on easing the constraints to structural transformation in key areas such as education and the business climate, as well as devising a clear strategy for tackling the challenges posed by rapid population growth.

A. Growth, Volatility and Productivity

1. Growth in the WAEMU has been comparatively weak and highly volatile over the last 25 years (Figure 1). Despite a lower starting level of income per capita, WAEMU countries – both on average and individually – have grown more slowly over the past two decades relative to the rest of Sub-Saharan Africa. With real per capita growth averaging only 0.5 percent over the past 25 years, WAEMU has underperformed relative to a set of peer countries in both SSA and Asia who had a similar level of per capita income to the WAEMU in 1990, but who are now almost two times richer in PPP terms.² This underperformance has been most pronounced since the turn of the century; although growth in the WAEMU was weaker in absolute terms in the 1990s, it is the 2000s that appears to be a lost decade of sorts. In this period, growth took off in many low income countries, but saw only a slight acceleration in the WAEMU. Growth also remains relatively more volatile than in peer countries, despite having declined in recent years.

2. Comparatively low human capital accumulation and total factor productivity appear to have driven slow growth (Figure 2). A growth decomposition exercise suggests that two thirds of growth over the past two decades can be attributed to labor accumulation, while capital accumulation accounts for almost a third. In contrast, human capital and productivity appear to have been the main drivers of the mediocre growth performance, and are the factors in which the WAEMU lags most relative to other countries. Basic education rates in the WAEMU are significantly

¹ Prepared by John Hooley and Monique Newiak.

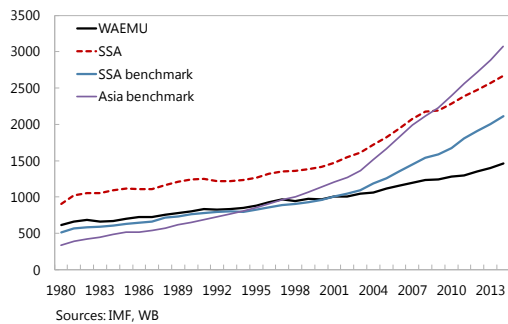
² WAEMU had a per capita income in 1990 of US\$805 in PPP terms compared to \$1401 in 2013. An SSA peer group consisting of Lesotho, Kenya, Rwanda, Ghana, Tanzania, Zambia, and Uganda had an average per capita income of \$765 vs. \$2003 in 2013. And an Asian peer group of India, Lao, Bangladesh, Vietnam and Cambodia had an average per capita income of \$649 in 1990 vs. \$2887 in 2013.

lower compared to SSA and Asian benchmark countries, and more unequally distributed across the population. Public investment efficiency remains relatively low, and a challenging business environment impedes productive private sector activity (see also note on the external stability assessment). These factor 'gaps' suggest that policies should target access and quality of education, public financial management (PFM) reforms to improve the efficiency of public investment, and key areas of the business environment, such as contract enforcement and efficient electricity provision.

Figure 1. WAEMU: Growth and Volatility

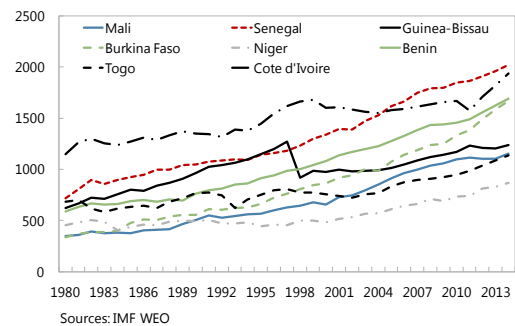
Output growth per capita in the WAEMU has been relatively weak over the past two decades ...

GDP per capita
(Current USD, PPP)



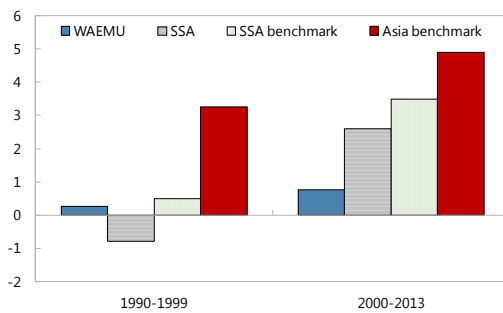
...both on average and across individual member countries.

GDP per capita
(Current USD, PPP)



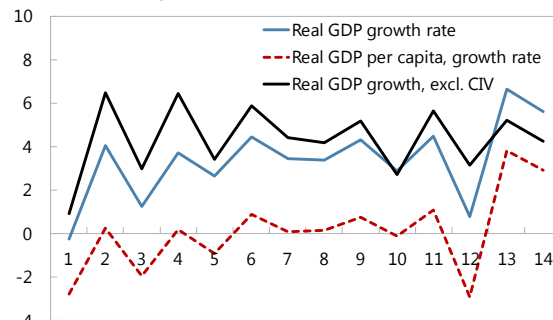
Growth was particularly weak in the 2000s relative to peers – a 'lost decade' perhaps?

Real GDP per capita growth 1990-2013
(In Percent)



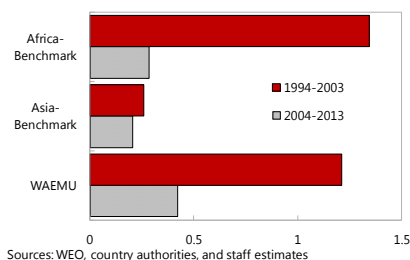
Growth has also been volatile...

Real GDP Growth, 2000-2013
(Annual Change, in Percent)



... and more so than in peer countries.

Relative Volatility, 1994-2013
(Ratio of Standard Deviation to Average Growth Rate per Period)



The volatility of overall GDP growth is much lower than for individual sectors, since services behave countercyclically relative to agriculture and industry.

Cross-correlation matrix (1970-2012)	GDP	Agriculture	Secondary	Tertiary
GDP	1	0.42	0.34	0.71
Agriculture	0.42	1	0.40	-0.24
Secondary	0.34	0.40	1	-0.22
Tertiary	0.71	-0.24	-0.22	1

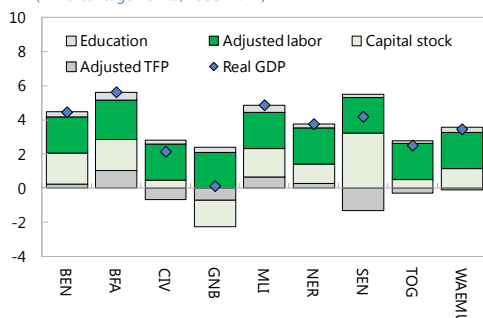
Standard deviation (1970-2012)	GDP	Agriculture	Secondary	Tertiary
	2.72	4.87	4.36	4.51

Sources: UN National Accounts

Figure 2. WAEMU: Productivity

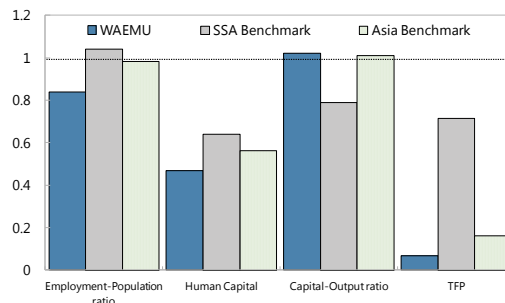
Growth has been driven primarily by labour and capital accumulation over the past decade...

Average Contribution to Annual Growth Rate
(In Percentage Points, 1995-2012)



... while the levels of other factor inputs are comparatively low. Policies should thus focus on...

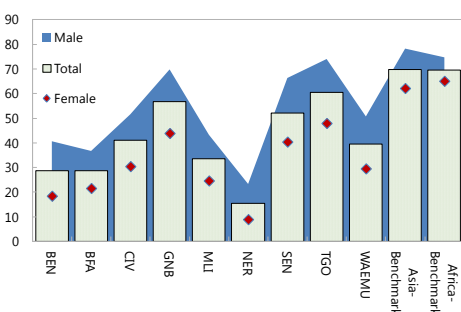
Factor inputs
(Relative to US level)



Sources: IMF (2014 x).

...boosting human capital by increasing the quantity, quality and equality of education...

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

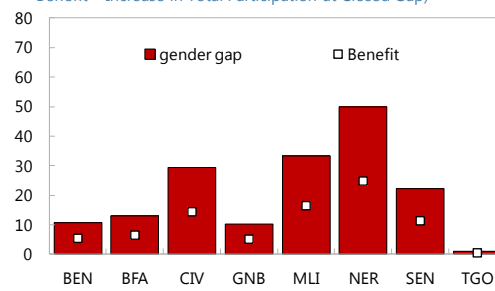


Sources: UNESCO Institute for Statistics

...strengthening the labor force by, e.g., boosting female participation in the workforce,...

Gains from Gender Equality

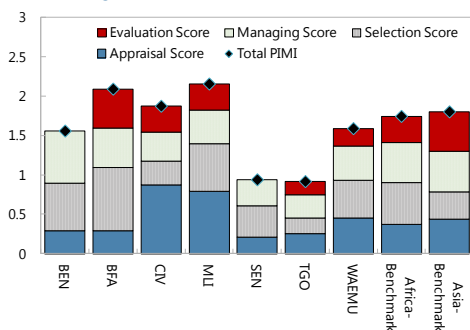
(Gender Gap = Male minus Female Labor Force Participation
Benefit = Increase in Total Participation at Closed Gap)



Sources: EDI, ILO KILM

...increasing TFP gains by increasing the efficiency of public investment...

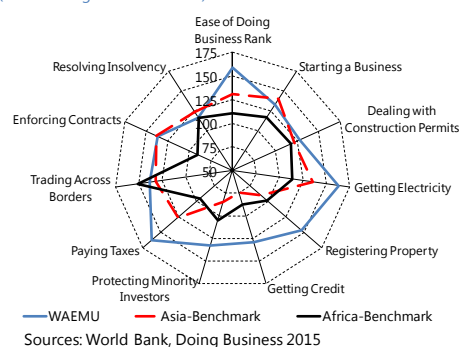
Public Investment Efficiency (PIMI Score)
(According to Dabla-Norris et al., 2011)



...and strengthening the business environment¹

Ease of Doing Business 2015

(Rank among 189 Economies)



Sources: World Bank, Doing Business 2015

¹ Doing Business indicators should be interpreted with caution because of the limited number of respondents, a limited geographical coverage, and standardized assumptions on business constraints and information availability.

B. Recent Trends in the Structure of Output and Exports

Output

3. There has been relatively little evidence of structural change in the WAEMU over time (Figure 3). The sectoral composition of output has remained remarkably stable and the level of diversification low. The service sector accounts for over 50 percent of economic activity, while agriculture and industry account for around 30 percent and less than 20 percent respectively, shares that have changed little since 1970 for when data are first available. The level of output diversification – based on a Theil Index measure (Box 1) – is also low and has remained stagnant, in contrast to faster growing benchmark countries, which have witnessed sharp increases in diversification over time.

4. The WAEMU has experienced a modest de-industrialization, contrasting with a sharp industrial expansion in this sector among benchmark countries. The share of the manufacturing sector in output fell from 14 percent to 10 percent in the WAEMU but increased from 10 percent to 16 percent in the Asian peer group between 1990 and 2012. Conversely, the share of the agricultural sector has declined across low-income countries over time but has remained elevated in the WAEMU.

Box 1. WAEMU: Export Diversification and Quality (IMF 2014a and Henn et al., 2013)

Export product diversification is captured by the Theil index which can be decomposed into a “between” and a “within” sub-index:

$$\begin{aligned} \text{Theil Index} &= \frac{1}{N} \sum_i \frac{\text{Export Value}_i}{\text{Average Exp. Value}} \cdot \ln \frac{\text{Export Value}_i}{\text{Average Exp. Value}} \\ &= \text{Theil}_{\text{between}} + \text{Theil}_{\text{within}} \end{aligned}$$

in which i is the product index and N the total number of products. The “between” Theil index captures the *extensive margin* of diversification, i.e. the number of products, while the “within” Theil index captures the *intensive margin* (product shares).

Export partner diversification. The Theil index is also available across export partners. In this case, i and N in the above relationship represent the export partner index and number of export partners, respectively.

Export quality is measured by the export’s unit value adjusted for differences in production costs, relative distance to the trade partner, and the development of a country through the following relationship:

$$\text{Trade Price}_{mxt} = \alpha_0 + \alpha_1 \ln \text{unobservable quality}_{mxt} + \alpha_2 \ln p.c. \text{ income}_{mxt} + \alpha_3 \ln \text{Distance}_{mxt} + \text{Error}_{mxt},$$

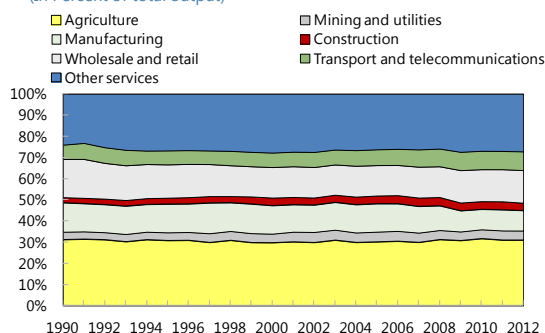
in which the sub-scripts m , x , and t denote importer, exporter and time period respectively.

Figure 3. WAEMU: Output Diversification

The structure of output has changed remarkably little over time...

Output structure

(In Percent of total output)

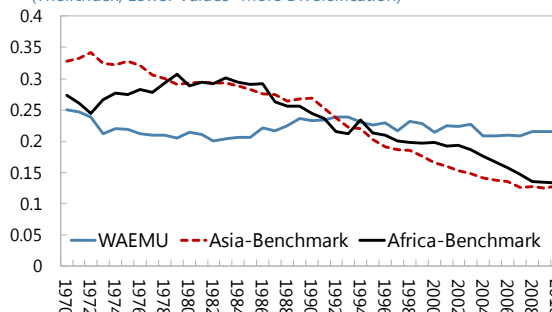


Sources: UN National Accounts

...in contrast to peers whose output has become significantly more diversified.

Output Diversification

(Theil Index; Lower Values=More Diversification)

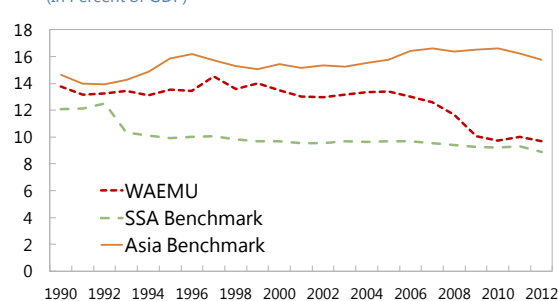


Source: IMF (2014a).

The manufacturing sector has declined modestly in the WAEMU, but expanded in benchmark countries ...

Manufacturing output shares

(In Percent of GDP)

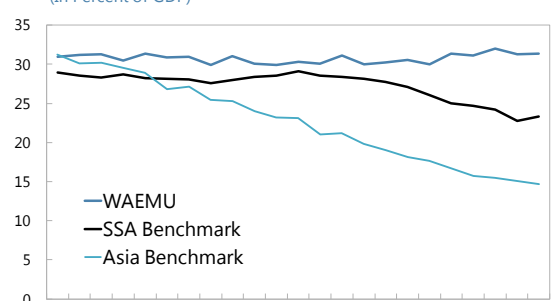


Sources: UN National Accounts

... in which the size of the agricultural sector diminished, in contrast to its resilience in the WAEMU.

Agricultural output shares

(In Percent of GDP)



Sources: UN National Accounts

Exports

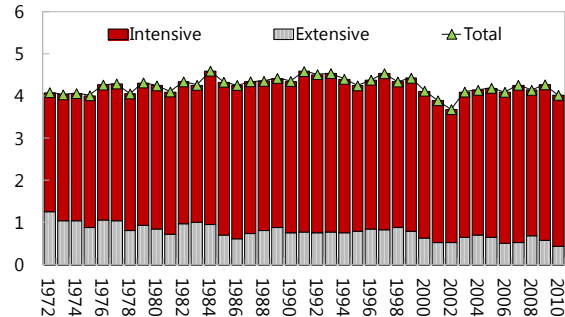
5. Export diversification has been stagnant on average (Figure 4). While there is some variation across WAEMU countries, on average diversification of exports has not taken place. In contrast, African benchmark countries diversified quite strongly after 1990 and have caught up to Asian benchmark countries whose diversification levels were already comparatively high before that time. The number of export partners has increased on average, but the shares of the main export partners remain dominant (see also note on the implementation of ECOWAS common external tariff).

Figure 4. WAEMU: Export Product and Partner Diversification

Progress in export product diversification has been insignificant on average...

WAEMU: Export Product Diversification

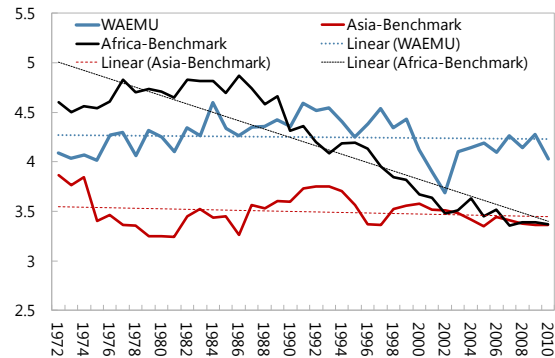
(Theil Index Decomposition, Lower Values=More Diversification)



... in contrast to benchmark countries.

Export Product Diversification

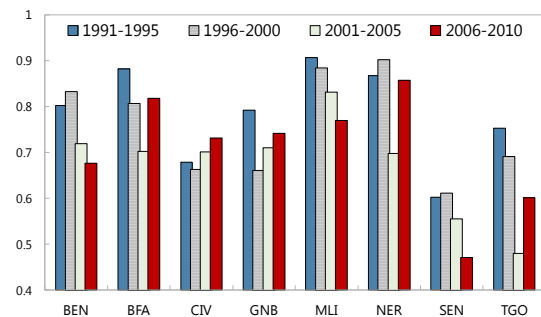
(Theil Index Decomposition, Lower Values=More Diversification)



Exports tend to be concentrated in a few major products in the majority of countries.

Share of Three Major Exports in Total Exports, 1991-2010

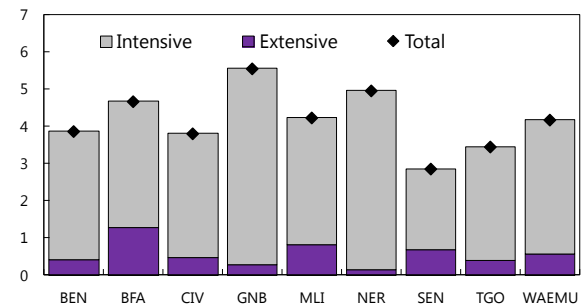
(Export Product Measured at 2-Digit SITC Level)



Senegal and Togo appear to be the most diversified economies in the region.

Export Product Diversification, 2006-2010

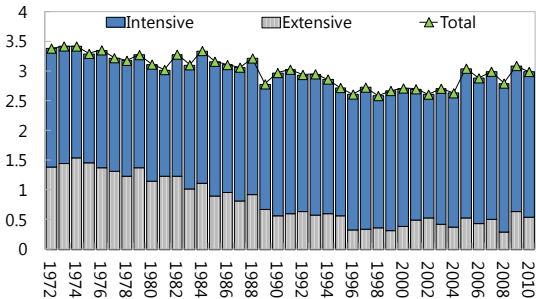
(Theil Index Decomposition, Lower Values=More Diversification)



The number of export partners has increased in the WAEMU, but concentration across partners remains high...

WAEMU: Export Partner Diversification

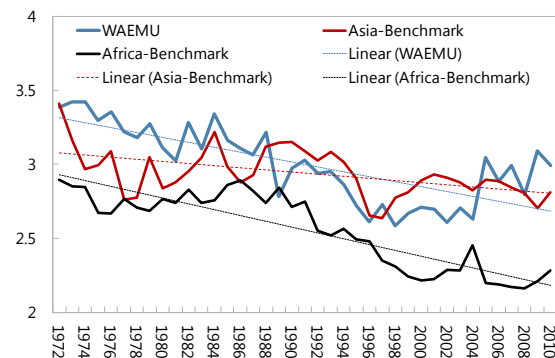
(Theil Index Decomposition, Lower Values=More Diversification)



... and overall diversification low compared to African benchmark countries.

Export Partner Diversification

(Theil Index Decomposition, Lower Values=More Diversification)



Source: IMF (2014a).

6. Relative export quality has decreased for some sectors and been stagnant in others

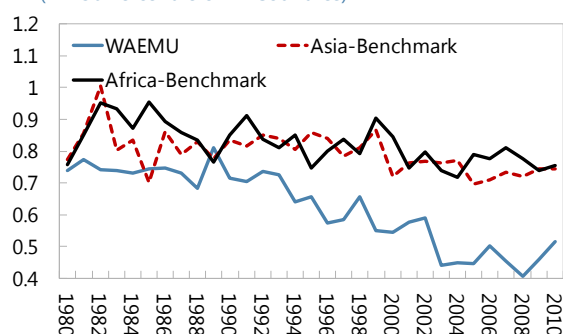
(Figure 5). While not far from benchmark country levels agricultural and manufacturing export quality has been stagnant on average. Relative commodity export quality has decreased steadily since the 1990 and appears to be far below that of benchmark countries now. The last chart in Figure 6 plots the export quality for each of the five largest sectors (2-digit SITC) in each WAEMU country. It suggests that, while some countries have succeeded in achieving a high product quality in at least one of their top export sectors, export concentration in many countries remains high in sectors of relatively low quality.

Figure 5. WAEMU: Export Quality

Commodity export quality has declined relatively in the last two decades.

Commodity Quality

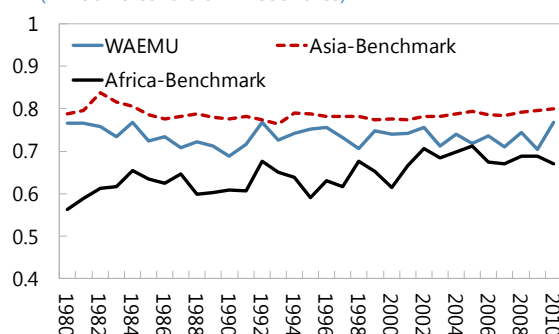
(1 = 90 Percentile of All Countries)



Manufacturing quality has performed well based on SSA standards, but is outperformed by other benchmarks.

Manufacturing Quality

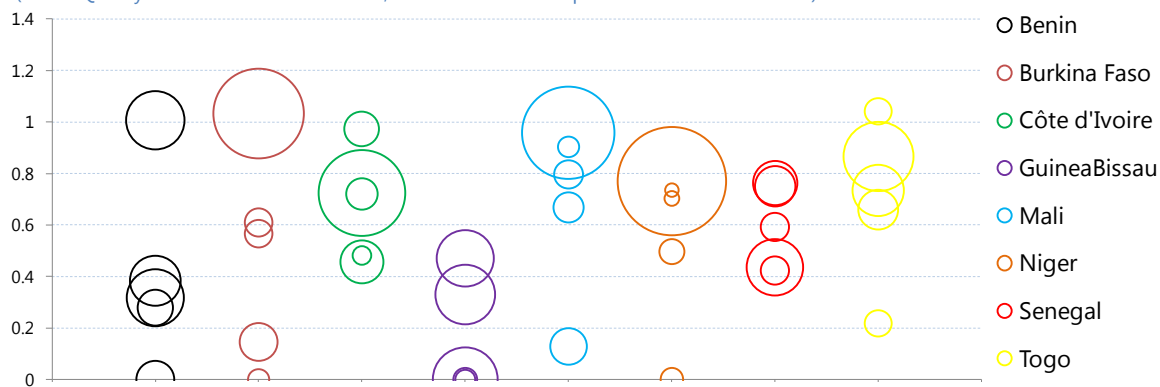
(1 = 90 Percentile of All Countries)



In some WAEMU countries, the largest export industries are those of relatively lower quality.

Export Quality for Five Largest Export Sectors

(1=90 Quality Percentile of All Countries; Size of Bubbles Proportional to Product Share)



Source: IMF (2014a).

C. Fostering Growth through Structural Transformation and Diversification

7. Structural transformation and diversification of output has the potential to boost growth and reduce volatility in the WAEMU. Through the reallocation of resources from low productivity sectors such as agriculture, to higher productivity sectors such as manufacturing, ‘between-sector’ structural transformation can boost overall productivity. Structural transformation can also occur ‘within sectors’ creating productivity gains through, for example, implementing quality improvements to existing products and services, focusing production on relatively high value-added activities, or diversifying into new high value-added products. Output diversification can not only yield growth benefits but also reduce the volatility of growth, since new products and services are likely to be subject to different demand and supply shocks than existing ones.

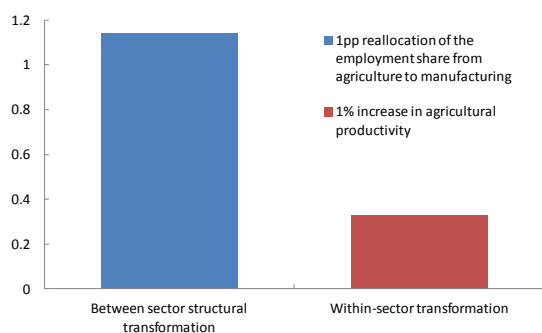
8. Estimates suggest these benefits could be substantial (Figure 6).³ A 1 percentage point reallocation of labor from agriculture to manufacturing (keeping sectoral productivity levels constant) could raise output by 1.1 percent; such is the gulf in labor productivity levels between the two sectors. Similarly, a 1 percent increase in agricultural productivity (keeping resource allocation constant) could raise aggregate output by 0.3 percent, given the concentration of labor in this sector. Increasing output diversification to the level of benchmark countries could increase average growth by 0.6 to 0.9 percent. According to IMF (2014a), similar results hold for more export diversification. Here, a 1 standard deviation increase in LIC’s export diversification raises the growth rate by about 0.8 percentage points which translates into potential $\frac{1}{2}$ percentage point growth gains if export diversification was raised to levels observed in Asian or SSA benchmark countries. Output growth volatility could be significantly reduced as well.

³ The magnitude of these potential growth gains will vary across member economies, as a function of their different starting structures, productivity levels and extent of diversification.

Figure 6. WAEMU: Gains from Structural Transformation, Diversification and Quality Upgrading

Even relatively modest structural transformation in the region could yield significant growth gains.

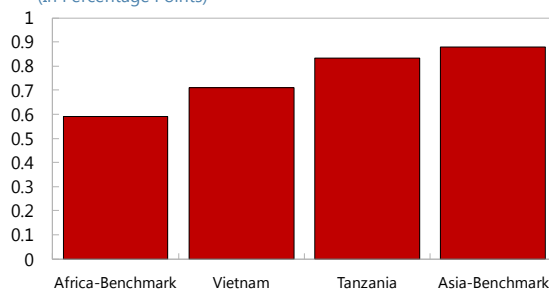
Potential output gains from structural transformation
(In Percent of Real GDP)



Sources: UN National Accounts, WDI and staff estimates

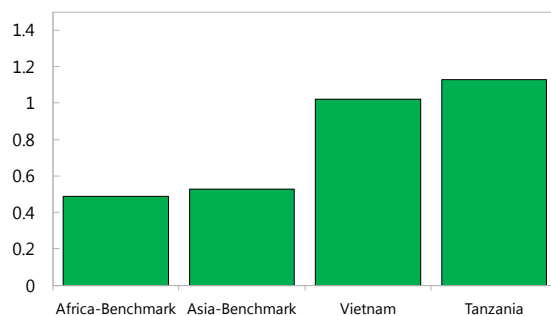
Raising the region's output diversification to benchmark levels could yield significant growth gains...

Potential Growth Effects from Raising Output Diversification in the WAEMU to benchmark levels
(In Percentage Points)



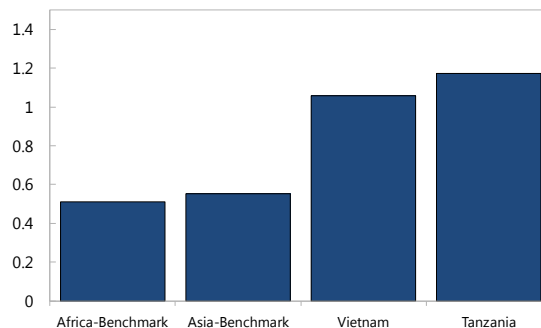
... as would an increase in export diversification.

Growth Effects from Increased Diversification in the WAEMU
(Increase in Annual Growth Rate, Average 2001-2010)



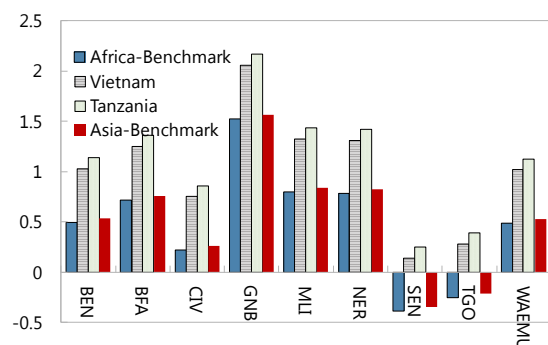
Volatility could decrease by similar magnitudes.

Volatility Gains from Increased Diversification in the WAEMU
(Decrease in Average 5-year Volatility, in Percentage Points)



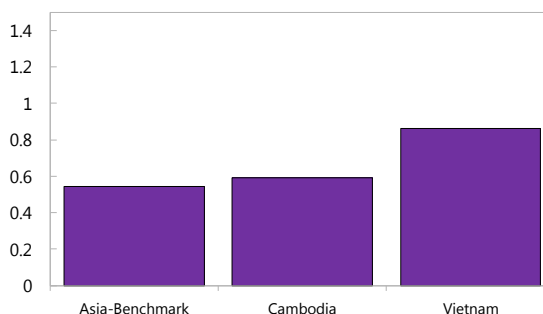
The potential growth effects from increased diversification vary across WAEMU countries.

Growth Effects from Increased Diversification across WAEMU Countries
(Increase in Annual Growth Rate, Average 2001-2010)



Further growth gains could be realized from upgrading manufacturing quality to benchmark levels.

Growth Effects from Increased Manufacturing in the WAEMU to Benchmark Levels
(Increase in Annual Growth Rate, Average 2001-2010)



Sources: IMF (2014a) and own calculations.

9. Policies to promote structural transformation and diversification should focus on addressing weaknesses that hinder entry into new lines of economic activity (IMF, 2014a).

Weaknesses abound in the WAEMU in terms of the provision of infrastructure, the accumulation of human capital, the provision of finance, the establishment of trade networks and functioning of factor markets, the regulatory and institutional environment and the creation and management of ideas. Evidence from cross-country comparisons and individual case studies suggests that policies targeting these areas can be successful in fostering structural transformation and diversification, while the evidence is more mixed concerning the success of industry-focused and narrowly targeted measures (Box 2). That said, in the WAEMU, the agricultural sector does warrant special attention, given its large scope for productivity and quality improvements and its high share of employment (see Box 3).

Box 2. WAEMU: Reforms which Foster Structural Transformation (based on IMF 2014a)

While there is no silver bullet of reform to foster structural transformation, the following general policies have emerged from successful country case studies and cross-country evidence (IMF 2014a, IMF 2013). Several of these policies may be addressed at both the national and regional levels.

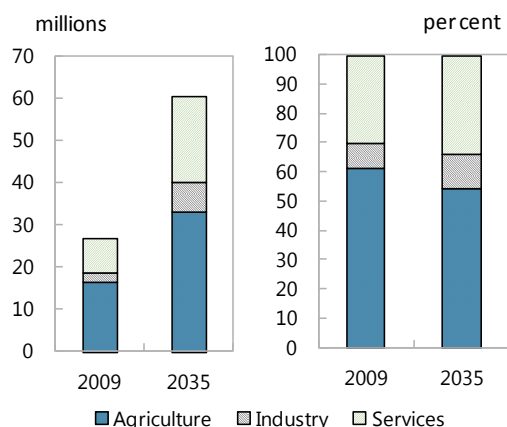
- *Macroeconomic stability.* In Vietnam, Rwanda, Malaysia and Tanzania successful diversification has coincided with stronger macroeconomic policies and a greater degree of stability.
- *Market entry.* Reduced entry barriers can motivate entrepreneurs to expand their activities. In Vietnam collectivization was reversed which led to the emergence of a more diverse agricultural sector. In Rwanda a large divestment of state enterprises stimulated private sector activity, and in Tanzania, the dismantling of the state distribution system has positively affected the private sectors as well. The liberalization of the electricity market has been associated with higher degrees of structural transformation as well.
- *Education.* Education has been associated with higher levels diversification and export quality. In Vietnam, years of education increased by about 50 percent in just two decades. In Rwanda, education has been expanded through ninth grade for all students.
- *Institutions and the business environment.* Henn et al. (2013) report that a one standard deviation increase in institutional quality is associated with a 0.3 increase in quality upgrading. In Bangladesh, the removal of red tape has been associated with large investments in export processing zones.
- *Industrial policies.* The support of specific industries has shown mixed results. In Malaysia and Bangladesh, the targeting of specific industries has been successful, but the targeted sectors have become dominant, decreasing export diversification. In natural resource dominated economies, however, such targeting may help the economy to diversify.

Box 3. WAEMU: The Role of Agriculture in Structural Transformation

The agricultural sector accounts for a significant share of output, employment and external trade in the WAEMU and is likely to continue to do so in the medium term, even if there is an expansion of the manufacturing sector. Structural transformation within agriculture sector, through productivity improvements to existing activities and boosting the sector's external performance should thus be key focuses of growth-enhancing policies.

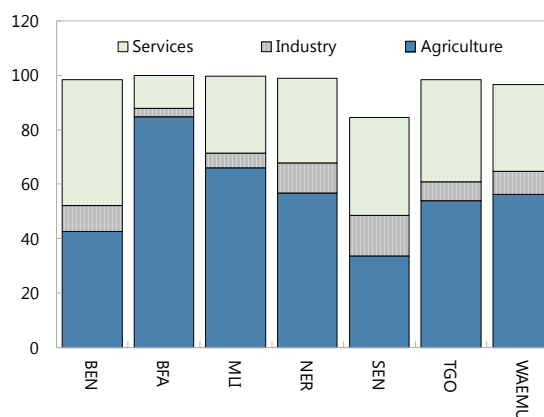
Agriculture has the highest share of employment in the WAEMU and so inclusive growth depends on its prospects. Agriculture currently employs around 60 percent of the workforce in the WAEMU and is likely to remain the largest employer in the medium term. Applying the methodology in Fox and Thomas (2014), the number of workers in agriculture could double over the next two decades, with the share in total employment declining only from around 60 percent to 50 percent.

Sectoral employment projections



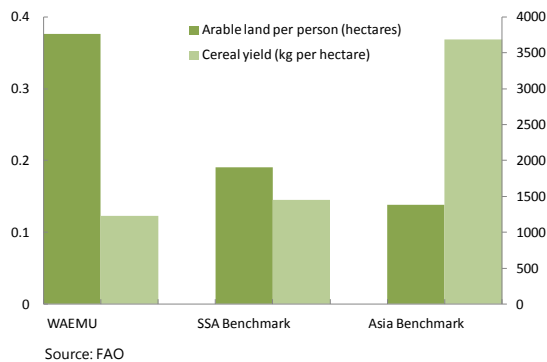
Notes: Based on model from Fox and Thomas (2013). Projections exclude Côte d'Ivoire and Guinée-Bissau due to lack of sectoral employment data

Employment by Sector, 2011 or Latest Available (In Percent of Total Employment)

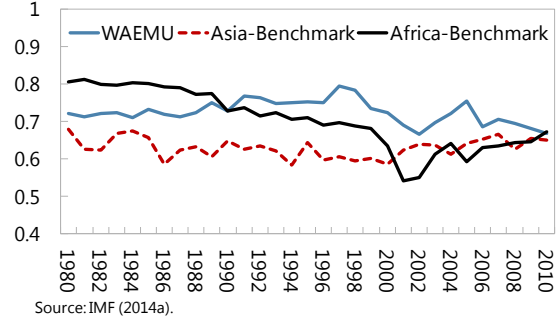


Sources: WDI 2014, ILO KILM

Policies targeting productivity improvements within agriculture may have the most traction in the medium term. The expected continued buoyant supply of agricultural labor suggests that large-scale 'between-sector' structural change (through a large shift in the share of workers in agriculture to the manufacturing sector) may be unlikely to materialize in the medium term. Instead, productivity improvements within the agricultural sector may provide a more fruitful focus for policies. The data suggest that agricultural productivity is relatively low in the WAEMU, indicating substantial scope for progress. For example, cereal yields remain below those in benchmark countries, while the relative quality of agricultural exports has been on a declining trend.

Box 3. WAEMU: The Role of Agriculture in Structural Transformation (Concluded)**Agricultural indicators, 2011****Agricultural Quality**

(1 = 90 Percentile of All Countries)

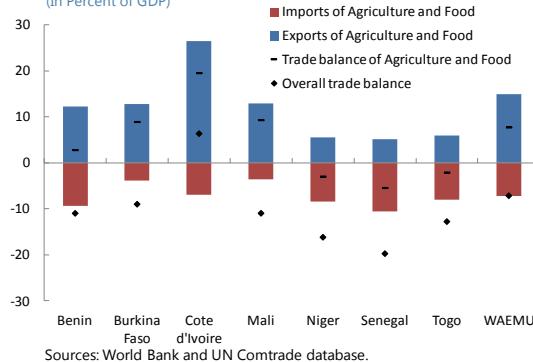
**Another set of policies could focus on the external competitiveness of the agricultural sector.**

Although agriculture is the WAEMU's largest employer and accounts for a large share of output, the agricultural trade balance is negative in some member countries, which in turn contributes to the regional external deficit (see note on external sector sustainability). Moreover, several countries import the same agricultural products that they export. The WAEMU's trade balance could therefore be improved by policies encouraging countries to increase exports of agricultural products in which they produce domestically and have a comparative advantage, while at the same time to reduce imports of these products. The WAEMU would appear to have scope to increase the quantity of agricultural exports: as well as abundant agricultural labor, the share of uncultivated arable land is relatively high and several neighboring countries are large importers of agricultural products.

Food and agricultural imports in neighboring countries, 2011

	US\$ bn	% WAEMU GDP
Nigeria	19.5	25.0
Algeria	11.5	14.7
Ghana	2.4	3.1
Mauritania	0.4	0.5
Gambia	0.1	0.1
WAEMU	4.9	7.2

Sources: World Bank and UN Comtrade database.

Agriculture and food trade balance
(In Percent of GDP)

D. Demographic Trends and Employment

10. Structural transformation and improvements in diversification will take several years and occur against the backdrop of challenging population dynamics (Figure 7). Fertility rates in the WAEMU remain among the highest in the world, despite rapid declines in child mortality. As a result, WAEMU's population structure is young; in 2010 almost half the population was below the age of 15. Over the next two decades, the population could double, from around 100 to 200 million, with a net annual increase in the labor force of around 1.3 million new workers.

11. A young population presents the opportunity for the WAEMU to benefit from a potentially large 'growth' dividend (IMF, 2015). According to UN population projections, the WAEMU will undergo a demographic transition over the next few decades, characterized by declines in infant mortality and fertility rates, with a resulting increase in the share of the working age population relative to the overall population. (Box 4). If fertility rates in the WAEMU decline from their current level of 5.7 children per woman to 3.8 (the UN's most optimistic scenario), the share of working age population will increase from 52 percent to 58 percent by 2035. This demographic transition would be characterized by a higher share of the population that is potentially economically productive and can create income, boost fiscal revenues and ease the burden of fiscal expenditure on services such as healthcare and education. The potential impact on growth from these effects could be important. A recent paper (Drummond et al, 2014) estimated that a 1 percentage point increase in the working age population increases real GDP growth per capita by 0.5 percentage points.

12. But the demographic 'growth dividend' could remain elusive if fertility rates continue to decline only modestly or if the labor market is unable absorb the new workers in productive activities. If fertility rates in the WAEMU do not decline from their current elevated levels, the working age population share will also stay constant and the demographic transition and associated growth dividend will remain elusive in the medium term. Moreover, this scenario would not be innocuous for growth: the rapid increase in population would still pose enormous pressure on public services and infrastructure which are inadequate even at current population levels (Guengant and May, 2013). And even if fertility rates do decline, the increase in the working age population share may not yield growth benefits. Recent evidence (Fox and Thomas, 2013) suggests that there are speed limits with which the manufacturing and service sectors can absorb new workers, with any excess labor forced to seek informal employment in low productivity (often subsistence) agriculture (see Box 3), or enter unemployment. Both of these outcomes would pose risks to overall productivity growth, poverty levels and social cohesion.

13. Policymakers aiming to promote structural transformation cannot ignore these demographic challenges. A large number of new workers could be a boon for structural transformation and diversification as young workers are likely to be more flexible than existing ones to enter into new economic activities. Policies should thus focus on ensuring the demographic transition takes place, through managing fertility rates (for example, through promoting increased use of contraception) and harnessing the growth benefits of any transition, by providing the

necessary education to ensure new entrants to the labor force have the skills to be fully employed in high value-added activities.

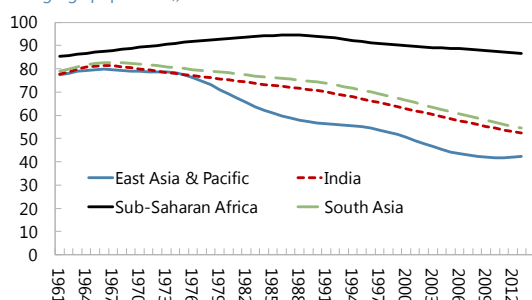
Box 4. WAEMU: The Demographic Dividend

There are two main channels of demographic growth dividends (Mason and Lee, 2006 and IMF, 2015). The first is the result of a rapid growth of the working age population followed by a decline of fertility rates. As a consequence, the economy's dependency ratios decline. The second arises later when parents have fewer children and accumulate savings in anticipation of aging. With a large number of young people projected to enter the labor market in the WAEMU in the next decades, the WAEMU could benefit from the first dividend if fertility rates were declining.

The demographic dividend has been substantial in several countries. For the case of India, Aiyar and Mody (2011) estimate that 40 to 50 percent of per capita growth has been attributable to the demographic dividend since the 1970s. In East Asia, the demographic transition has likely contributed one fourth to two fifth to a GDP per capita growth rate of around 6 percent between 1965 and 1990 (Bloom et al., 2003). However, even with an increasing ratio of working-age population to population, the growth effects of the demographic dividend are not automatic. The shift in the demographics needs to be complemented by investments in education to ensure the entrance of a productive workforce into the labor market at higher wages.

Dependency Ratio, 1961-2013

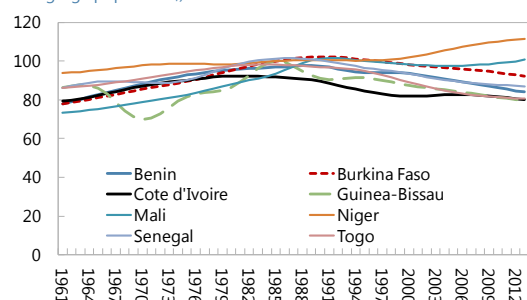
(People younger than 15 or older than 64 in Percent of working-age population,)



Sources: WDI, UNI World Population Prospects

Dependency Ratio, 1961-2013

(People younger than 15 or older than 64 in Percent of working-age population,)

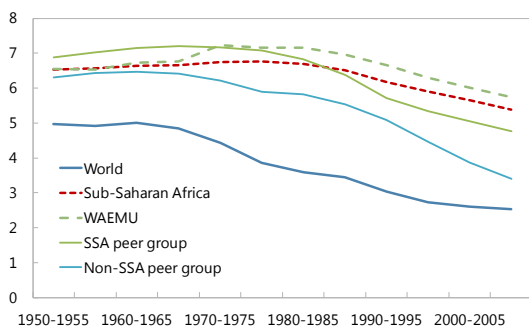


Sources: WDI, UNI World Population Prospects

Figure 7. WAEMU: Demographics

Fertility rates in the WAEMU are among the highest in the world and have only declined modestly over recent decades..

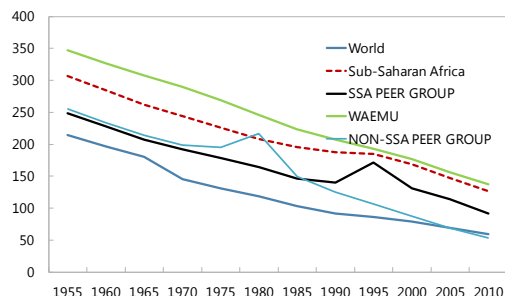
Fertility rates
(Number of children per woman)



Sources: UN population projections, 2012

...despite a rapid fall in child mortality rates..

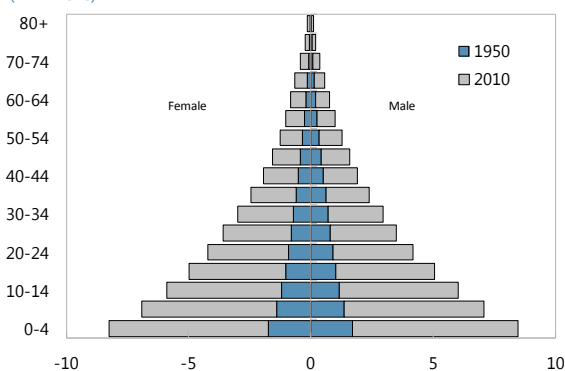
Child mortality
(Deaths under age 5 per 1000 live births)



Source: UN population projections

This has led to a very young population, with almost half under the age of 24....

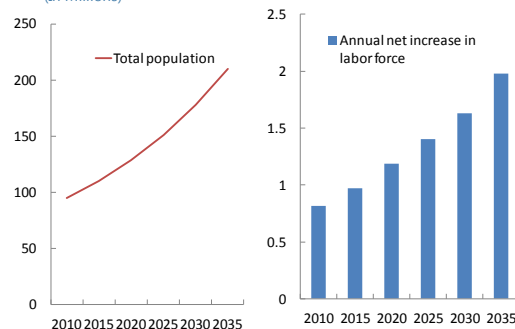
Population Pyramid - WAEMU
(In Millions)



Sources: UN World Population Prospects, 2012

...and the labour force is expected to increase by around 1.3 million workers each year between today and 2035.

WAEMU population projections
(In Millions)

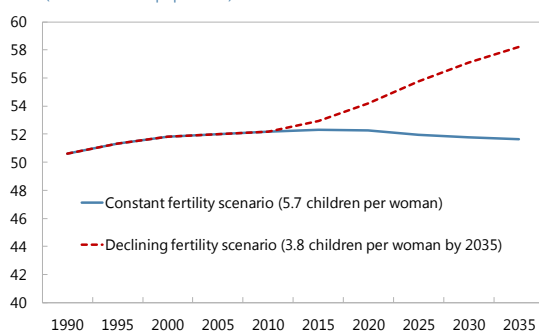


Sources: UN Population Projections, 2012

Notes: Based on current labor force participation rates

A decline in fertility rates would provide a significant boost to the working age population and the opportunity of a demographic 'growth dividend'.

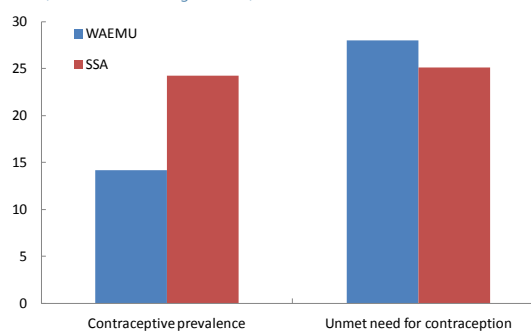
Working age population share (15-64)
(Percent of total population)



Sources: UN Population Projections, 2012

Generating a decline in the fertility rate will be challenging but one focus of policies in this area could be to increase the use of contraception among women who desire it.

Contraceptive prevalence and unmet need
(Percent of women aged 15-49)



Sources: WDI

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TRADE AND REVENUE IMPLICATIONS OF ECOWAS COMMON EXTERNAL TARIFFS ON WAEMU MEMBER STATES¹

This note quantifies the macroeconomic effects of a replacement of the WAEMU common external tariff (CET) with the ECOWAS CET in WAEMU member states. It presents stylized facts on the current tariff system and trade in the region, provides estimates on the trade and fiscal implications of the tariff changes for each WAEMU country, and quantifies the dynamic effects of the tariff change on trade and real GDP. The results suggest that the tariff change could increase WAEMU imports from other ECOWAS countries but decrease imports from the rest of the world. The government revenue effects vary widely, ranging from a loss in most countries by up to 2½ percent of current revenue to an increase in a few countries by up to 3 percent. The changes also have dynamic impacts on trade and GDP.

A. Introduction

1. The Common External Tariff (CET) for ECOWAS was adopted at a Heads of State Summit in October 2013 in Dakar became effective in January 2015. As a consequence of the CET, WAEMU countries, a subset of ECOWAS countries, are subject to a new tariff structure: Currently WAEMU countries (all members of the ECOWAS), impose tariffs within the range of 0 to 20 percent on goods from all non-WAEMU countries, including ECOWAS countries, with a simple average import tariff of about 12 percent. After adopting the CET, WAEMU countries will eliminate tariffs on goods from all ECOWAS countries, but tariffs on products from non ECOWAS-members will increase. The revenue implications of this policy change could be significant, as many WAEMU countries rely heavily on import duties (Figure 1, chart 3).

2. This note. While the literature on trade agreements in West Africa is vast, the revenue effects of the CET implementation have not been quantified. This note contributes to the existing research by estimating the revenue implications of the implementation of ECOWAS CET on WAEMU member states. First, the note provides a stock-taking of the current tariff structure in the WAEMU, current intra and extra-ECOWAS trade flows, and a description of the implied changes to the tariff structure with the ECOWAS CET. Second, it estimates the elasticity of import demand for individual members of the WAEMU. Finally, a partial equilibrium framework is used to assess the potential trade and revenue effects of the tariff change.

3. Caveats. Due to data limitations, this note focuses on aggregate effects under simplified assumptions on supply and consumption responses. It excludes effects from informal activity in the

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empirical analysis. Additional research, such as a simulations using product categories and accounting for the informal economy could give a more differentiated picture of the effects of the policy changes. The effects of ECOWAS countries moving closer to a single market which could benefit WAEMU countries are not quantified in this note.

B. Stylized Facts on Trade and Tariffs within WAEMU and ECOWAS

4. Trade between WAEMU countries and the rest of ECOWAS is rather low. The WAEMU's intra-regional trade and trade with the rest of ECOWAS remain weak, with some variation across countries. Burkina Faso, Guinea-Bissau and Mali are the only WAEMU countries for which intra-WAEMU imports constitute more than one fifth of the total import value, and only Côte d'Ivoire, Niger and Senegal import close or more than 10 percent from non-WAEMU ECOWAS countries (Figure 1, chart 1). Trade balances between the WAEMU and the rest of ECOWAS thus remain low, with only Guinea-Bissau individually showing a trade surplus with the rest of ECOWAS of almost 7 percent of its GDP.

5. WAEMU countries in general rely heavily on import duties (Figure 1, chart 3). Import duties constitute a substantial source of revenue for WAEMU countries, with import duties representing at least 8 percent of total government revenue in any WAEMU country over the period 2000-2013. In 2013, import duties represented at least 13 percent of total government revenue in all WAEMU countries, with the highest share of 34 percent in Benin. With the exception of Côte d'Ivoire, more than half of imports to any WAEMU country face a tariff rate of 10 or 20 percent.

6. The introduction of the ECOWAS CET would eliminate tariffs on the WAEMU's import from other ECOWAS countries but increase tariffs on imports from the rest of the world. The ECOWAS CET is organized in five bands. The first four bands are taken from the WAEMU CET (see Table 1). However, the ECOWAS CET includes a fifth tariff band of 35 percent for specific goods for economic development, which implies a customs tax increase for WAEMU countries and a reduction for non-WAEMU ECOWAS countries, such as Nigeria and Guinea.

Table 1. WAEMU: Structure of ECOWAS and WAEMU CET²

Category	Description	WAEMU Duty Rate (in Percent)	ECOWAS Duty Rate (in Percent)
0	Essential social Goods	0	0
1	Goods of primary necessity, raw materials and specific inputs	5	5
2	Inputs and Intermediate goods.	10	10
3	Final Consumption goods	20	20
4	Specific goods for economic development	-	35
-	Average	11.93	12.27

Source: Ofei and al. (2014) and WAEMU Commission.

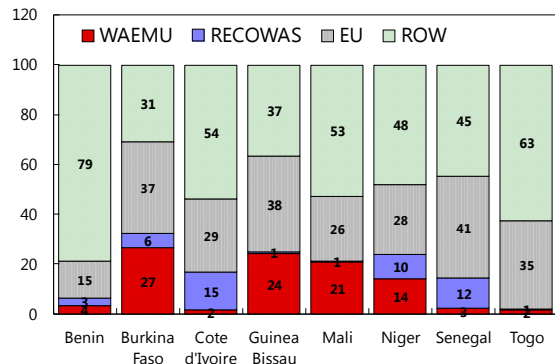
² Structure of the ECOWAS CET as in the version agreed upon by the region's ministers in Praia in March 2013; details on the tariff bands applied to each tariff line are shown in WAEMU Regulation 23/2002/CM/UEMOA.

Figure 1. WAEMU: Stylized Facts: Trade within ECOWAS

Imports into the WAEMU from other ECOWAS countries are currently low...

Import by Origin, 2013

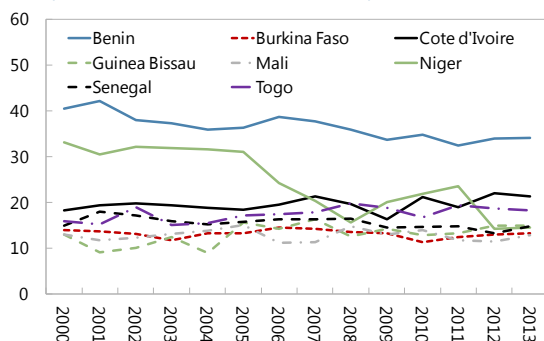
(In Percent of Total Imports)



Import duties constitute a significant share of government revenue in the WAEMU, with the highest share in Benin.

Evolution of Import Duties

(In Percent of Government Revenue)

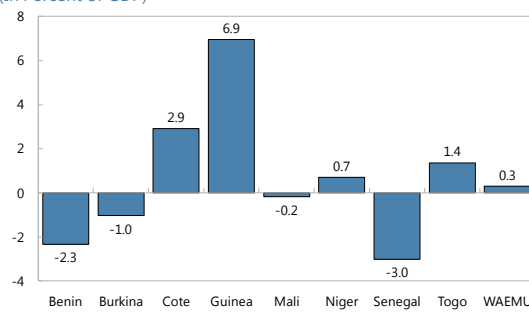


Sources: Country authorities and staff estimates.

... and the WAEMU's trade balance with other ECOWAS members is insignificant.

Trade Balance of WAEMU Members with ECOWAS, 2013

(In Percent of GDP)

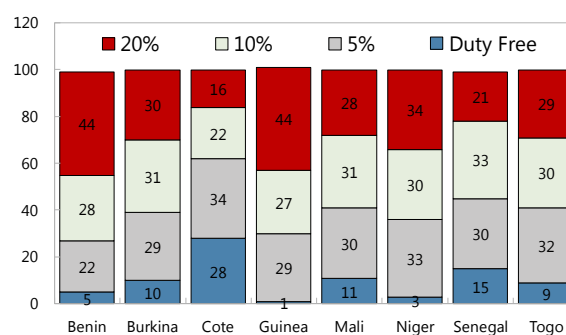


Source: Direction of Trade Statistics

The majority of imports are taxed within the two highest tariff bands.

Import Value by Tariff Band

(In Percent of Total Imports, 2010)



Source: WTO Tariff Analysis Online Facility

C. Partial Equilibrium Effects of Changes in the Tariff Structure

Import Responsiveness to Price Changes in WAEMU

7. To quantify each WAEMU member country's import responsiveness to price and tariff changes, the price elasticity of the volume of trade is estimated in a first step. To this end, an import function is postulated in which the quantity of imports depends on the price of imports, the price of other domestic consumable commodities, and domestic income. Controlling for further determinants of imports, the following relationship is estimated econometrically

$$\ln(M_t) = \beta_0 + \beta_1 \ln \frac{P_t^m}{CPI_t} + \beta_2 \ln(GDP_t) + \beta_3 \ln(TAXM_t) + \varepsilon_t$$

in which in each year t , M_t is the import volume index, $\frac{P_t^m}{CPI_t}$ is the ratio between the import price index and Consumer Price Index, $TAXM_t$ is the level of import duties, and GDP_t is the real GDP_t level (constant 2005 prices). β_0 , β_1 , β_2 , β_3 , and ε_t represent a constant, the price elasticity of import

demand, the income elasticity of import demand, the elasticity of import to collected duties revenue, and the error term, respectively. The estimated import demand elasticities are presented in Tables 2 and 3.

Table 2. WAEMU: Price Elasticities of Imports – Individual Countries

	Benin	Cote d'Ivoire	Mali	Togo
Import Price-CPI ratio	-2.43***	-0.22*	-0.87**	-0.63***
GDP	-4.00***		1.19***	
Import duties	1.11***	0.25**	0.35**	
GDP-Export		1.08***		0.71**
Volume of Exports		0.86***		1.12***
Constant	33.91***	-10.65**	-4.32**	-5.58**
Pvalue-Ftest	0	0	0	0

***, **, * significant at 1, 5, and 10 percent level, respectively
Heteroskedasticity corrected by White (1980) estimator
Serial Correlation corrected by Cochrane-Orcutt (1949) estimator

Table 3. WAEMU: Price Elasticity of Imports

	WAEMU
Import Price-CPI ratio	-0.39***
Real GDP	0.73***
Import duties	0.46***
Constant	-0.79

***, **, * significant at 1, 5, and 10 percent level, respectively
Panel corrected standard errors (control for heteroskedasticity/ cross sectional dependence)
Serial correlation corrected by Prais Winsten (1954) estimator with panel specific ar1 coefficient.

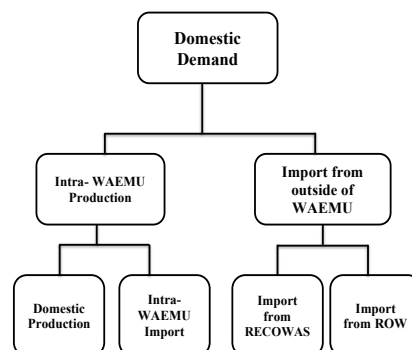
8. The price elasticity of import demand varies strongly across WAEMU countries. The results indicate that the percent decrease in import demand due to a one percent change in the import price varies from about 0.2 (in Côte d'Ivoire) to 2.4 (in Benin), with an average of about 0.4 for the WAEMU region as a whole. The high elasticity in Benin may be explained by the informal re-exports of Benin to Nigeria estimated to represent 50 percent of imports going through the Port of Cotonou (see Box 2).

9. The change in the tariff structure is expected to increase the WAEMU's imports from other ECOWAS countries, but decrease its imports from the rest of the world. The trade effects are estimated using the methodology described in Box 1. With the exception of Togo, for which the share of non-ECOWAS imports in total imports is very high, trade creation is estimated to be larger than trade diversion in all WAEMU countries. In other WAEMU countries, the tariff change would imply an increase in imports from non-WAEMU ECOWAS countries by approximately 6 percent, with the highest increase of 52 percent in Benin (Figure 3, chart 1). The increase in the average tariff for non-ECOWAS countries is estimated to slightly reduce WAEMU countries' imports from the rest of the world, with imports decreasing by less than 0.2 percent for most WAEMU countries, and the highest effect of a ¾ percent decrease expected in Benin (Figure 3, chart 3).

10. The estimated trade effects of tariff elimination should be considered as the upper bound of the potential effects. Similarly to the effects after the introduction of the WAEMU CET, trade creation may be lower because some non-tariff barriers may remain in place after the implementation of the ECOWAS CET. Trade diversion may also be lower because some WAEMU imports from non-ECOWAS countries have no substitute in other ECOWAS countries, so that the decrease in imports from non-ECOWAS countries could be lower than the effect estimated in this note.

Box 1. WAEMU: Assumptions and Analytical Framework

Assumptions. The world is divided in three blocks which WAEMU countries import from: WAEMU countries, other ECOWAS countries which are not member of WAEMU (rest of ECOWAS) and the Rest of the World. The supply of products to the WAEMU has perfect supply elasticity (overall supply to WAEMU countries for products is infinite at a given price). In each WAEMU's country, local consumers substitute imperfectly products from these regions, but all products from the three alternative sources are equally substitutable. The elimination of tariffs within ECOWAS is assumed to have negligible competition effects between intra-WAEMU exports to a given WAEMU country.



Trade creation refers to the substitution of domestic production by imports from the rest of ECOWAS resulting from tariff elimination. Trade creation between WAEMU country i and the rest of ECOWAS is

$$TC_{i,RECOWAS} = -M_{i,RECOWAS} \eta_i^m \left[\frac{\tau^{WAEMU}}{1 + \tau^{WAEMU}} \right],$$

in which $M_{i,RECOWAS}$ is the value of imports from RECOWAS by country i , τ^{WAEMU} is the WAEMU's CET average tariff and η_i^m is the import demand elasticity.

Trade diversion is the substitution of imports from the rest of the world by imports from rest of ECOWAS, resulting from the elimination of tariffs between WAEMU and RECOWAS countries. It is defined by:

$$TD_{i,RECOWAS} = \frac{TC_{i,RECOWAS}}{GDP_i} M_{i,ROW}.$$

Other trade effects. The ECOWAS CET against non-ECOWAS members is higher than those applied initially by the WAEMU CET to non-ECOWAS countries. The implementation of the ECOWAS CET by the WAEMU thus eliminates their tariff against other ECOWAS countries but increases their tariff against non-ECOWAS countries. It may thus lead to a trade loss within WAEMU countries and the rest of the world. This other trade effect (OTE) is the change in WAEMU country i 's demand for import from non-ECOWAS country j resulting from the increase in tariff associated with the adoption of ECOWAS CET. The OTE can be written as:

$$OTE_{i,ROW} = M_{i,ROW} \eta_i^m \left[\frac{\tau^{ECOWAS} - \tau^{WAEMU}}{1 + \tau^{WAEMU}} \right],$$

where $M_{i,ROW}$ is the value of imports from the Rest of the world (ROW) by the country i , τ^{ECOWAS} is the average tariff of ECOWAS's CET, τ^{WAEMU} is WAEMU's CET average tariff and η_i^m is the import demand elasticity of country i .

The overall net trade effect can then be computed as

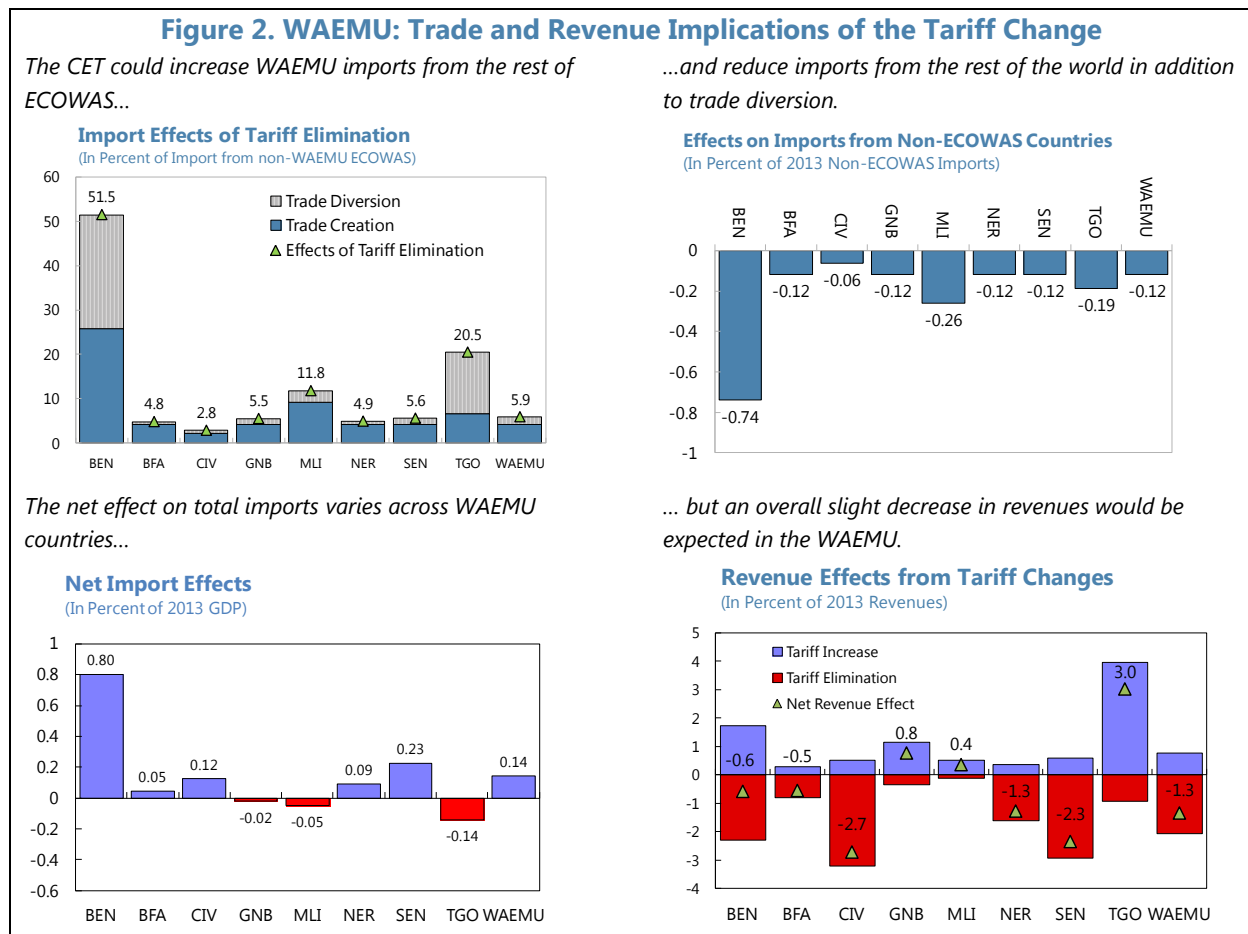
$$NTE_i = TC_{i,RECOWAS} + TD_{i,RECOWAS} + OTE_{i,ROW}.$$

Revenue Implications of Tariff Changes

11. Based on the projected trade effects, the revenue implications are estimated. The change in revenues in the WAEMU would be the combined effect of changes in tariff income from imports from non-ECOWAS countries (higher tariff vs. lower import value) and tariff income from non-WAEMU ECOWAS countries (lower tariff vs. higher import value):

$$\Delta R_i = [M_{i,ROW} - TD_i][\tau^{ECOWAS} - \tau^{WAEMU}] - [M_{i,RECOWAS} + TD_{i,RECOWAS}]\tau^{WAEMU}$$

In this equation, $M_{i,ROW}$ and $M_{i,RECOWAS}$ represent the value of imports from non-ECOWAS countries and non-WAEMU ECOWAS by country i , respectively. $TD_{i,RECOWAS}$ is the trade diversion from the non-ECOWAS countries to non-WAEMU ECOWAS countries. τ^{ECOWAS} and τ^{WAEMU} are the average tariffs of the ECOWAS CET and the WAEMU's CET, respectively.



12. The changes in tariffs could have ambiguous effects on revenue across WAEMU countries. The elimination of tariffs on imports from other ECOWAS countries would decrease government revenue. However, the tariff increase for products from the non-ECOWAS countries could have a positive impact on revenues. Based on the assumptions in Box 1 and the preceding paragraph, revenues in Benin, Burkina Faso, Cote d'Ivoire, Niger, and Senegal could decrease by ½

to approximately 2½ percent from their 2013 level (Figure 3, chart 4). However, consistently with current trade profiles implying a low share of imports from non-WAEMU ECOWAS countries, revenues could increase by ½ to 3 percent in Guinea-Bissau, Mali, and Togo.

13. Data limitations prevent accounting for informal trade in the WAEMU. The decrease in government revenue may be higher in some countries if informal trade is taken into account. For instance, this may be the case in Benin where informal re-exports to Nigeria are estimated to contribute 2 percent of GDP to fiscal revenue (Box 2). The implementation of the ECOWAS CET is more likely to imply a stronger fall in imports for re-exports and hence the re-exports, implying a loss in import duty revenue as well as VAT revenue. Due to trade policy restrictions, Beninese importers can only reach the Nigerian market by declaring imported goods for domestic consumption, paying the VAT and re-exporting informally the goods to Nigeria.

Box 2. WAEMU: Revenue Impact in Benin

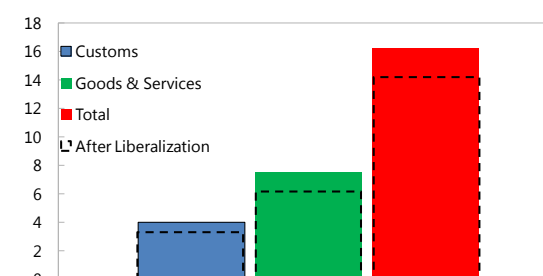
The estimated revenue impact related to trade liberalization is much stronger in Benin than in other WAEMU countries due to Benin's unique trade patterns dominated by informal trade with neighboring Nigeria. This Box provides more details on such trade and the potential revenue impact.

Benin's trade with Nigeria mainly takes the form of informal re-exports to Nigeria due to trade restrictions on certain products. The proximity to Nigeria and a relatively porous border has made Benin the preferred platform for importing certain goods that Nigeria imposes outright bans or prohibitive tariffs. These products include frozen poultry, rice, used cars, and textiles. It is estimated that about 50 percent of imports going through the Port of Cotonou are destined for Nigeria. Overall, at least 20 percent of Benin's GDP is generated through informal trade (World Bank, 2014).

These re-export activities are a significant source of tax revenue for Benin. The Beninese authorities reached an agreement with the Nigerian government to not re-export certain goods, so that the only way for Beninese importers to reach the Nigerian market is to first declare imported goods for domestic consumption, pay the VAT, and then re-export the goods informally to Nigeria. According to Geourjeon et al. (2008), the tax revenue gain stemming from this activity could be about 2 percent of GDP or 14 percent of total tax revenue. This highlights Benin's fiscal dependence on informal re-export activities with Nigeria.

Trade liberalization in Nigeria would thus result in significant revenue losses in Benin. Based on customs data from 2009 to 2012, the impact of a full trade liberalization scenario in Nigeria is estimated to result in a revenue loss of at least 2 percent of GDP (Sola et al., 2013, FAD TA mission).

Revenue Implications of a Full Liberalization of Nigeria's Trade Regime¹
(2011, In Percent of GDP)



¹The tax revenue after liberalization is estimated based on the assumptions that potential losses due to full liberalization of Nigeria's trade regime are distributed as 1/3 for customs revenue and 2/3 for goods and services tax revenue.

Sources: IMF Staff estimates; and Beninese authorities.

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