3. Financial Development and Sustainable Growth

Financial development is important for promoting strong and stable economic growth in sub-Saharan Africa. It entails the wider use of existing financial instruments as well as the creation and adoption of new ones for intermediating funds and managing risk (Chami, Fullenkamp, and Sharma 2010). With external demand and financing conditions significantly worsening, and a much less favorable growth outlook for sub-Saharan Africa, identifying untapped or underutilized sources of growth and reducing its volatility have become even more urgent. It is well established in both the theoretical and empirical literature that financial development is generally good for growth. Although debates have revolved around whether financial development is an engine for growth or just a lubricant, whatever factor can significantly ameliorate growth prospects for the region is worth examining in detail.

Theoretically, financial development positively affects growth through several channels that are important for sub-Saharan Africa. First, it helps catalyze savings into more usable forms, and supports efficient allocation of capital and enhancement of total factor productivity (TFP). Second, it supports diversification and management of risk. Third, it reduces information asymmetries and transaction and monitoring costs. Fourth, it can reduce volatility of the economy by providing a variety of instruments and information to households and firms to cope with adverse shocks through consumption and investment smoothing. Levine (2005), in a comprehensive review of the literature, finds a robust linkage between financial development and growth.

This chapter considers three questions to gauge the role of financial development in sub-Saharan Africa's sustainable growth:

- How has sub-Saharan Africa's financial sector developed in the past few decades, compared with other regions?
- With the changes over the past decades, is the financial sector now able to make a more positive contribution to growth and reduce its volatility?
- What will it take to draw further benefits from the financial sector, and what role can policies play in the process?

Our main findings are as follows:

- Sub-Saharan African countries have made substantial progress in financial development over the past decade, but there is still considerable scope for further development, especially compared with other regions. Indeed, until a decade or so ago, a large number of countries had seen the level of financial development actually regress relative to the early 1980s. With the exception of the region's middle-income countries, both financial market depth and institutional development are lower than in other developing regions.
- The region has led the world in innovative financial services based on mobile telephony, but there remains scope to increase financial inclusion further. The development of mobile telephone-based systems has helped to incorporate a large share of the population into the financial system, especially in east Africa. Nonetheless, there is a large untapped potential in this area in other countries, and this can compensate for some of the infrastructure and other shortcomings that most countries face. Microfinance has also grown rapidly, providing services to customers at the lower end of the income distribution. However, all new and rapidly growing financial developments also pose potential financial stability risks.
- Pan-African banks (PABs) have been a driver of home-grown financial development, but

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they also bring a number of challenges. Their expansion has promoted greater economic integration, and has contributed to improving competition and financial inclusion. The banks have increasingly filled the gap left by European and U.S. banks, which traditionally had dominated the financial landscape in Africa before the global financial crisis. However, their rapid growth also poses risks, the most important of which is related to the lack of adequate supervisory oversight on a consolidated basis and relatively weak internal governance frameworks. These vulnerabilities need to be addressed to mitigate systemic risks that could endanger financial development.

- Empirical estimates suggest that financial development has supported growth and reduced its volatility in sub-Saharan Africa, although the level of financial development in the region is below its benchmark level. Financial development has helped mobilize and allocate financial resources, and facilitated other economic policies in enhancing growth and stabilizing the economy. Though the literature has suggested that there is a threshold beyond which financial development can have an adverse impact on growth and its volatility (Sahay and others 2015b), the large majority of the region's countries are well below this threshold. Given that the region's level of financial development is below the benchmark level, raising the median financial development index to this level could be associated with an increase in growth by about 1½ percentage points. The results confirm the salutary effect on reducing the volatility of growth and other macroeconomic variables. However, countries need to be vigilant about the emerging macro-financial risks to effectively manage the risks associated with financial development.
- The region's improving financial development has been largely driven by better macroeconomic fundamentals, but hindered by weak institutional quality. Countries can reap the potential benefits of financial development notably by improving legal frameworks and corporate governance.

HOW HAS THE REGION'S FINANCIAL SECTOR DEVELOPED IN THE PAST FEW DECADES?

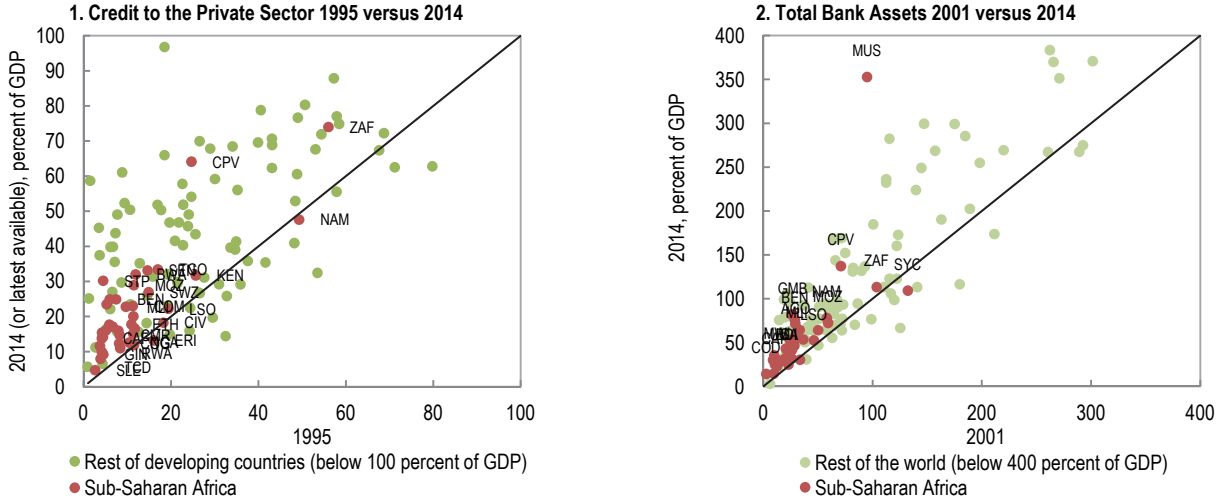
In most sub-Saharan African countries, financial development has progressed over the past four decades. However, with the exception of the region's middle-income countries, both financial markets and financial institutions are less developed than in other developing regions. Innovative financial services, such as mobile payment systems, have helped increase access for the broader population in several countries, but there is scope to increase financial inclusion further, particularly in low-income and fragile countries.

Financial development has progressed in the region but major gaps remain...

Financial depth has increased in sub-Saharan Africa but has not caught up with other developing regions, reflecting lower average income levels (Figure 3.1). The region's median ratio of private sector credit to GDP has increased by almost 10 percentage points since 1995, to about 21 percent in 2014. However, it remains only about half the size of that in the Middle East and North Africa, East Asia, and Latin America and the Caribbean, driven by sub-Saharan Africa's relatively high number of low-income countries in which the median level of credit to the private sector is comparable with other low-income countries. Trends in the depth of the banking sector paint a similar picture as banking sector assets at an average of 57 percent of GDP in 2014 are half the size of those in other regions.

The banking system dominates the financial landscape in most countries (Figure 3.2). The banking sector accounts for the biggest share of assets in most countries, with the exception of middle-income countries. For instance, nonbank assets account for more than 50 percent of financial sector assets only in Lesotho, Namibia, South Africa, and Swaziland. Within the banking system, foreign-owned subsidiaries account for the major share of assets across all country groups, particularly in some fragile states (Guinea, Guinea-Bissau, Madagascar), while foreign branches' contribution is minor. In several countries, state-owned banks' assets are sizable (Ethiopia, Rwanda, Seychelles,

Figure 3.1. Sub-Saharan Africa: Standard Measures of Financial Depth



Sources: IMF, International Financial Statistics; IMF World Economic Outlook database; and World Bank, FinStats 2016.
Note: See page 82 for country abbreviations.

Sierra Leone). Within the nonbank financial sector, pension funds contribute most significantly to the systems' assets, while stock exchanges are underdeveloped and illiquid (present in less than 60 percent of the region's countries).

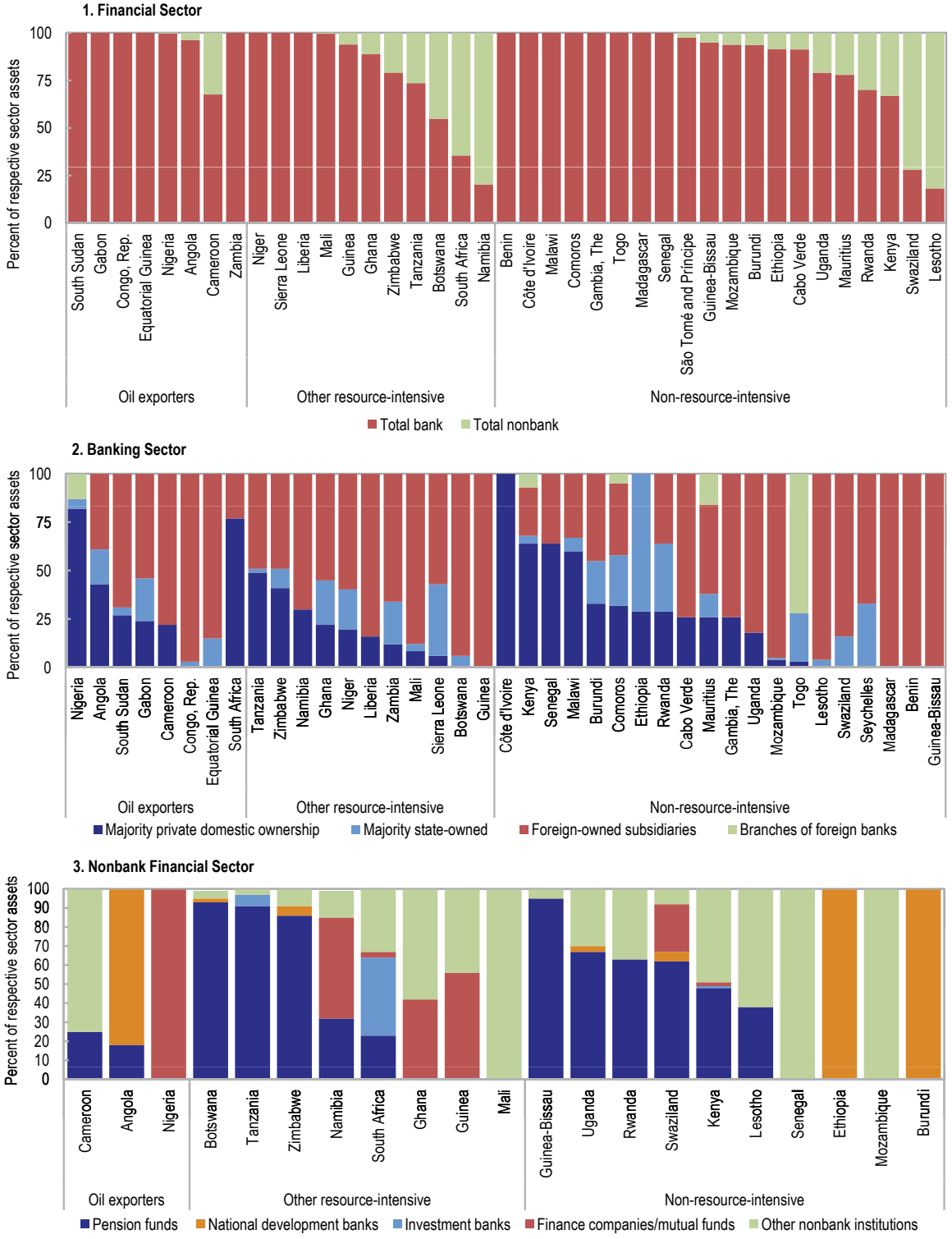
The rapid rise of PABs is an important driver for financial development. The overall scale of PABs' operations in Africa is larger than that of traditional European and American banks. There are now seven PABs that have a presence in at least 10 countries. In many cases, they frequently rank among the three largest banks in the country. They also constitute the majority of foreign capital in a number of countries such as Benin, Guinea-Bissau, Niger, and Togo. Their expansion took place mainly by establishing subsidiaries in host countries, which operate under the host countries' regulations and supervision. Some PABs, however, entered other activities that go beyond traditional bank intermediation. These include operations in capital markets, insurance, pensions, money transfers, microfinance, leasing, and even nonfinancial transactions.

The scale of PABs' operations is growing rapidly in the region, and has contributed to stronger competition for loans and deposits. The banks' clients include not only well-established large domestic and multinational entities, but also, increasingly, underserved small and medium-sized enterprises and individuals. Many banks are committed to deploying mobile banking services and Web-based technologies. They have become increasingly involved in arranging syndicated loans for infrastructure projects, where needs for such financing are increasing in the region (Enoch, Mathieu, and Mecagni 2015; Mecagni, Marchettini, and Maino 2015). This has required the expansion of funding sources by including longer-term financing through bond issuance, capital augmentations, and, in some cases, financing from international financial institutions. As a result, the PABs have reported higher profitability and improved cost-to-income ratios (Stijns 2015).

... with large scope to increase financial inclusion.

Notwithstanding these positive developments, access to traditional financial services in sub-Saharan African countries remains low, particularly for certain demographic groups (Figure 3.3). The share of the population having an account at, or borrowing from, a financial institution is low compared with other regions, with only the region's middle-income countries coming close to benchmark levels. Insufficient information on borrowers (such as credit history and credit risk), the lack of collateral registries, and difficult contract enforcement constrain bank lending to the private sector in many cases. In fragile states, access to

Figure 3.2. Sub-Saharan Africa: Sector Assets, 2012



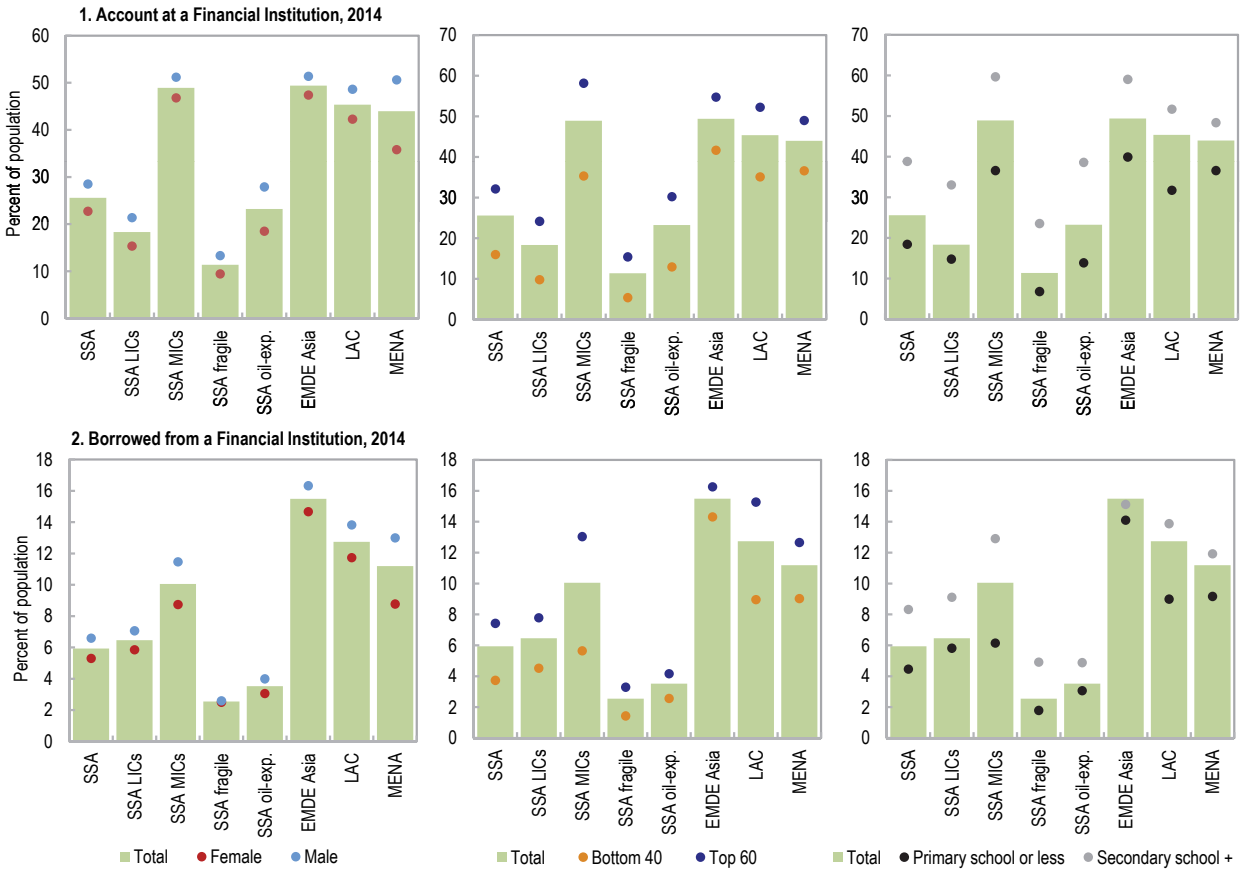
Source: IMF, African Department Financial Sector Profiles.

financial services is particularly limited because of the scarce provision of financial infrastructure—fewer than seven ATMs and fewer than three financial branches per 100,000 persons (Central African Republic, Comoros, Guinea-Bissau). In all of the region's country groups, access to financial services is higher by large margins for the more educated, the top 60 percent earners, and men. Access is particularly low in rural areas because branches are mostly concentrated in urban centers (Mlachila, Park, and Yabara 2013).

The region also suffers from considerable gender inequality in various aspects of financial inclusion, which is associated with higher income inequality. Box 3.1 shows that greater financial inclusion for women is associated with lower income inequality (see also Sahay and others 2015a), especially by increasing labor force participation rates. However, the empirical results should be interpreted with caution: the associations among different gender gaps, and between gender gaps and economic outcomes, are complex, and further work, as well as more data on financial inclusion over time, is needed to make more definitive statements about the direction of causality at the macroeconomic level.

Innovative financial services have started compensating for some of these shortcomings in a number of countries. The development of mobile payment systems has helped to incorporate large shares of the population into the financial system, especially in East Africa (Figure 3.4). The fast spread of systems such as M-Pesa, M-Shwari, and M-Kesho in Kenya has helped reduce transaction

Figure 3.3. Sub-Saharan Africa: Indicators of Financial Inclusion



Source: World Bank Global Findex 2014.

Note: EMDE Asia = emerging market and developing Asia; LAC = Latin America and the Caribbean; LIC = low-income countries; MENA = Middle East and North Africa region; SSA = sub-Saharan Africa.

costs and facilitate personal transactions, and has contributed to the use of financial intermediation services (IMF 2012b). The successful experience in east Africa provides a useful model that could be adapted by other countries in the region (Box 3.2). An important lesson from east Africa is the need to have a flexible enabling regulatory environment while taking into account supervisory challenges.

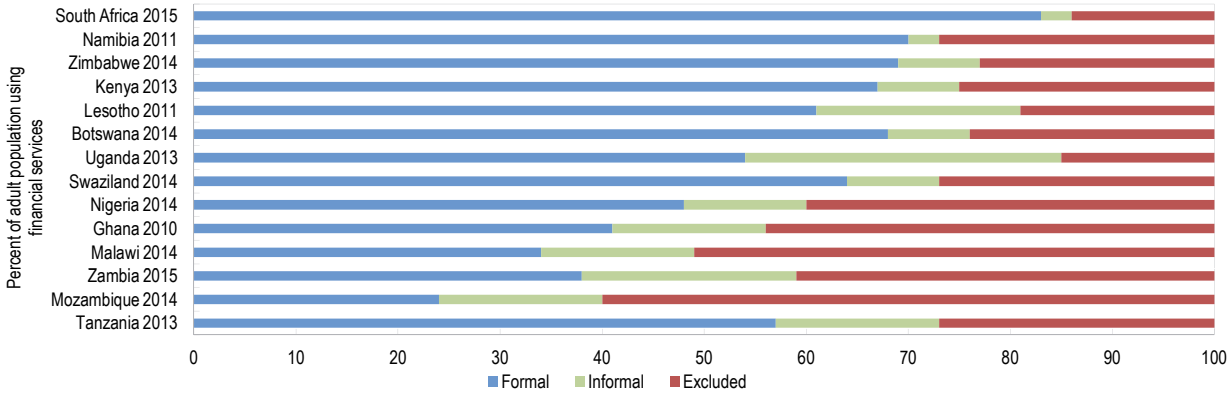
Microfinance offers an important avenue that can complement mobile banking to foster financial inclusion. Microfinance has grown rapidly, providing services to customers at the lower end of the income distribution (Box 3.3). It is particularly well suited for use by the poor with little or no collateral, including in rural areas, thereby significantly enhancing financial inclusion through savings mobilization and, to a lesser extent, the provision of credit. Although individual services in mobile payments and microfinance are expanding, both types of financial services so far have been complementary, with mobile payment systems facilitating mainly payment transactions, while microfinance has been relaxing financial constraints for poorer households.

Putting together the dimensions of financial development

A recently developed financial development index helps paint a more comprehensive picture of financial development (Box 3.4). To measure sub-Saharan Africa's performance in financial development over time, this chapter draws on the financial development index by Sahay and others (2015b).

- The index combines an assessment of countries' financial institutions (banks, insurance companies, mutual funds, and pension funds) and financial markets (stock and bond markets). It therefore captures the fact that financial services are provided by a multitude of financial institutions, and that markets have developed in a way that allows individuals and firms to diversify their savings and enterprises to raise capital beyond bank loans. Financial markets are relatively underdeveloped and institutions dominated by banks in many countries of the region; the index therefore captures the gap in financial services better than a one-dimensional measure such as private credit to GDP.
- Both financial institutions and markets are assessed based on depth (size and liquidity of markets), access (ability of individuals and companies to access financial services), and efficiency (ability of financial institutions to provide financial services at low cost and with sustainable revenues, and the level of activity of capital markets). By including indicators of profitability, the efficiency dimension of the index captures the fact that, despite strong growth in assets, financial systems in sub-Saharan Africa still lag behind other regions in terms of competition (World Bank 2012).

Figure 3.4. Sub-Saharan African Countries: Financial Inclusion



Sources: Finmark Trust, Finscope Survey.

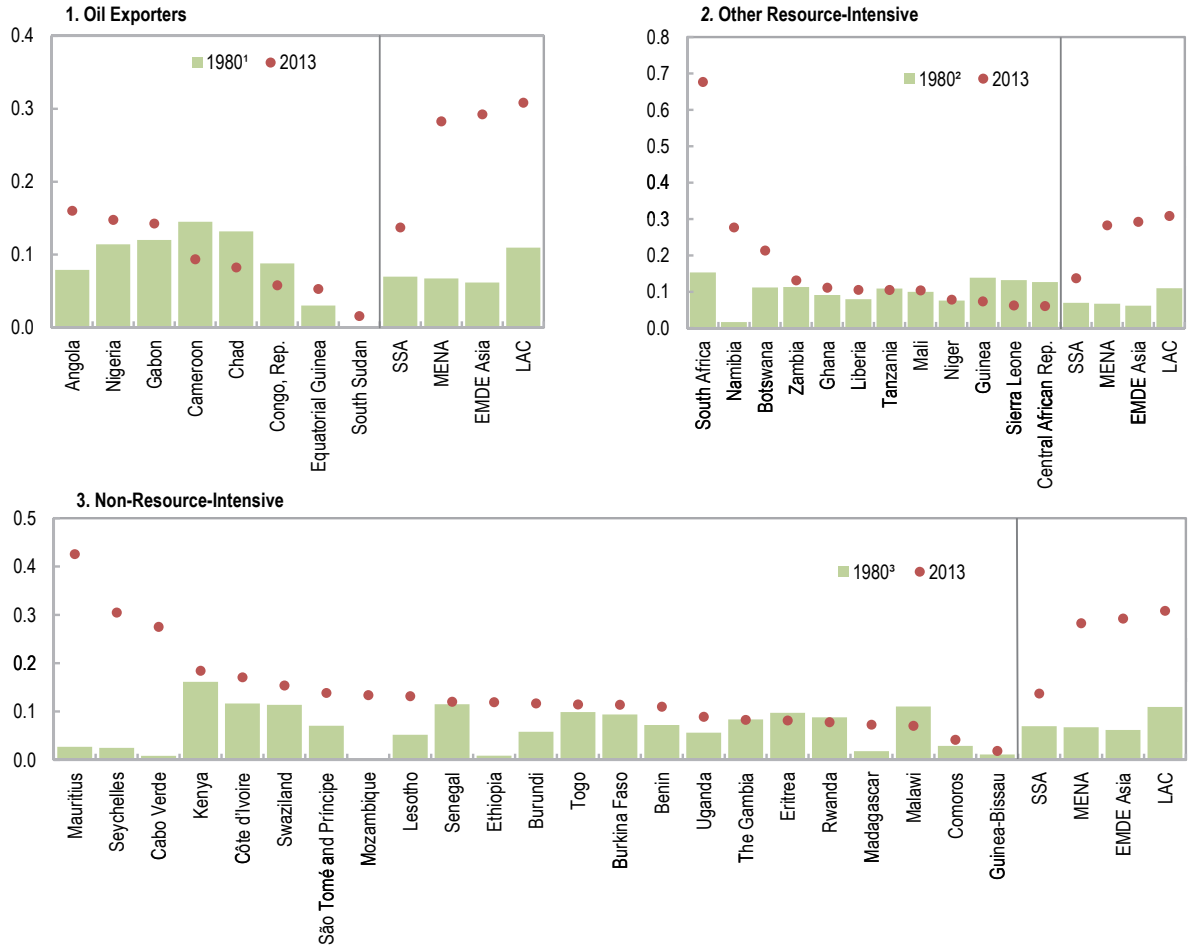
Note: Formal = formally financially included: Individuals 16 years or older who have/use financial products/services provided by a financial service provider that is regulated or officially supervised; Informal = informally included: Individuals 16 years or older who use financial mechanisms not provided by a regulated or supervised financial institution; Excluded = financially excluded: Individuals 16 years or older who have no financial mechanisms and rely on themselves/family/friends for saving, borrowing, and remitting; their transactions are cash-based or in-kind.

This dimension, along with the aspect of access, therefore gives an indication of the quality of the financial sector.

This composite index suggests that financial development in sub-Saharan Africa has been lackluster over the past three decades, although there has been some modest acceleration over the past 15 years. Figure 3.5 depicts the level of financial development for different country groups. While some middle-income countries (Mauritius, Namibia, Seychelles, and South Africa) have seen rapid financial development since the 1980s, progress has been slower in other groups of the region. In some cases (Cameroon, Central African Republic, Chad, and Sierra Leone), the current development levels are actually lower than in the 1980s, partly reflecting civil wars and conflicts. In most sub-Saharan African countries, the level of financial development is significantly lower than in other developing regions.

Where financial development has been rapid, it typically took place through both financial institutions and financial markets (Figure 3.6). This development has been supported by both the banking and nonbank financial sectors. For instance, in Botswana, a multitude of financial

Figure 3.5. Sub-Saharan Africa: Financial Development Index, 1980–2013
(1 = most developed; 0 = least developed)



Sources: Sahay and others (2015b); and IMF staff calculations.

Note: EMDE Asia = emerging market and developing Asia; LAC = Latin America and the Caribbean; LIC = low-income countries; MENA = Middle East and North Africa region; SSA = sub-Saharan Africa.

[1] 2000 for Angola; and 1990 for Equatorial Guinea.
[2] 1990 for Guinea and Namibia.
[3] 2000 for Eritrea; 1990 for Mozambique and São Tomé and Príncipe.

institutions exist, and the Botswana Stock Exchange and institutional investors' share in the financial system have grown rapidly in the first decade of the millennium (World Bank and IMF 2008). In Namibia, similarly, both banking sector and nonfinancial institutions have grown significantly within the past two years, with pension funds and insurance companies combined exceeding the share of commercial banks in total financial assets (Marchettini 2015; IMF 2007). Moreover, as the previous section elaborated, the rise of PABs has affected the financial sector landscape in the region significantly.

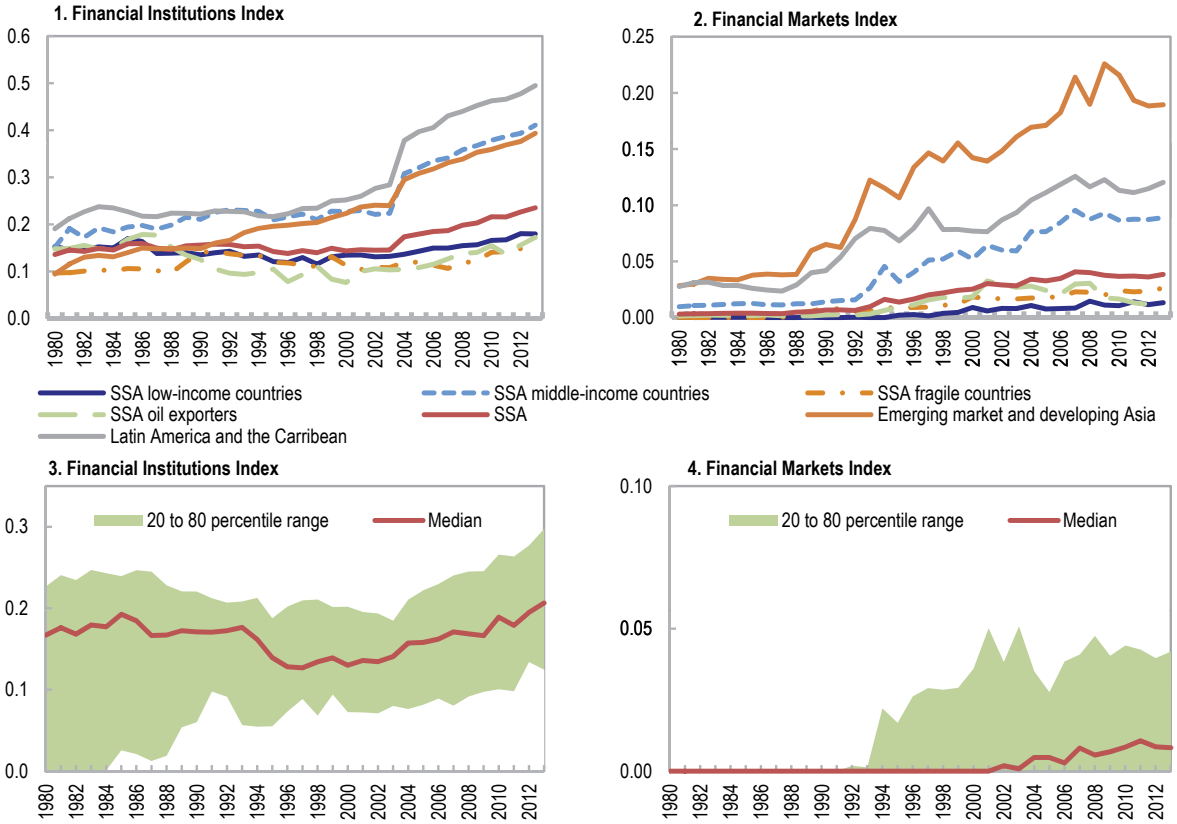
In sum, financial development in the region has made good progress, but underperformed against those of other developing regions. Financial inclusion also improved with the help of innovative financial services, such as mobile payment systems, but there remains scope for further improvement.

Further financial development is predicated on maintaining financial stability, especially avoiding financial crises. To that effect, the next section examines trends in financial stability and the regulatory environment.

FINANCIAL STABILITY AND REGULATORY REFORMS

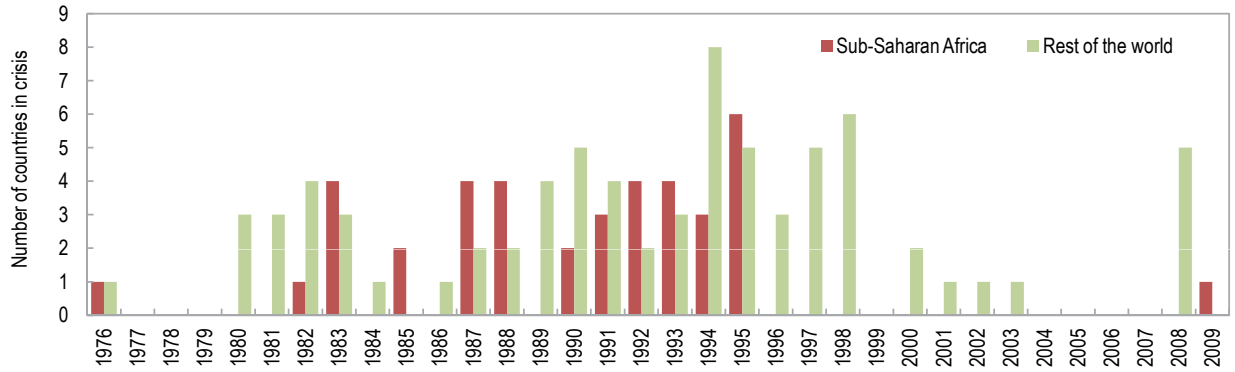
Key financial stability indicators—though stronger than in the past—have weakened more recently. This could presage a slower pace of financial development in the future. Progress in supervisory standards varies substantially across countries, and challenges to implementation remain. Pan-African banks bring new opportunities and are an important driver of financial development, but also pose oversight challenges, and may increase systemic risk.

Figure 3.6. Sub-Saharan Africa: Dimensions of Financial Development
(1 = highest development)



Sources: Sahay and others (2015b); and IMF staff calculations.
Note: SSA = sub-Saharan Africa.

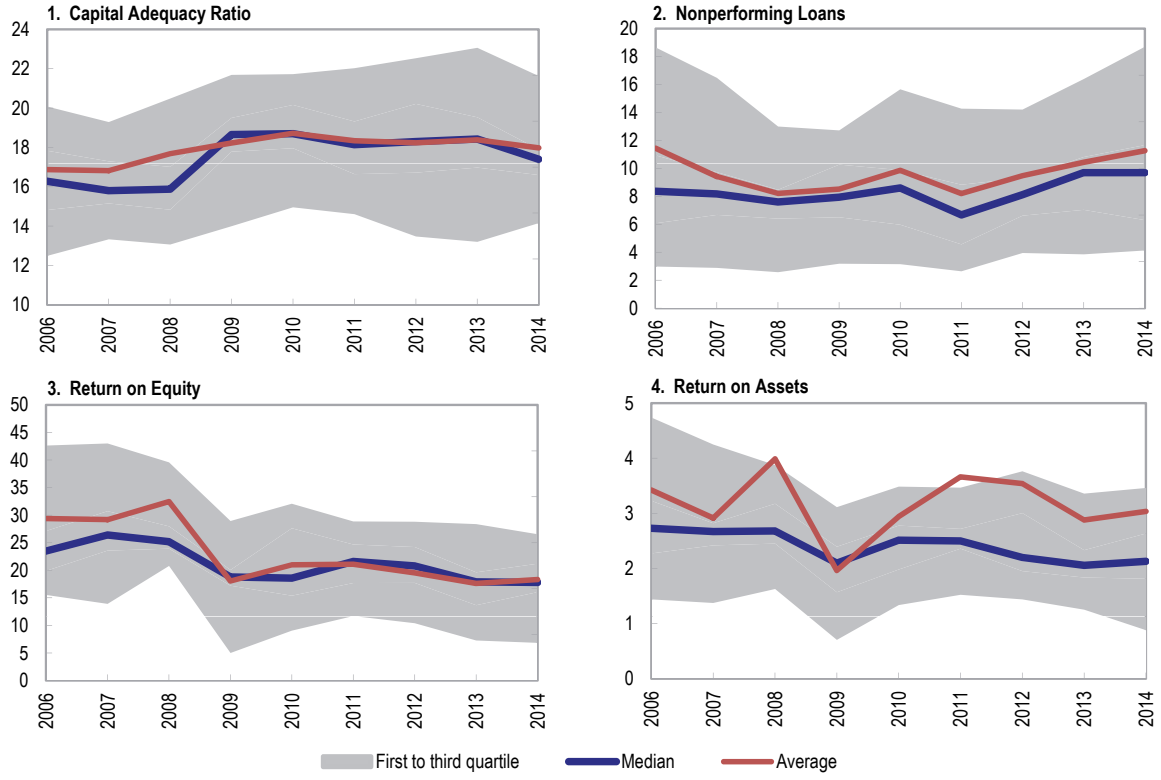
Figure 3.7. Systemic Banking Crises, 1976–2010



Source: Laeven and Valencia (2012).

Banking crises in the region have become significantly rarer, and financial soundness indicators have improved over recent decades but have weakened somewhat more recently (Figures 3.7 and 3.8). The reduced frequency of banking crises—a trend evolving in parallel with favorable macroeconomic conditions and improvements in supervisory framework—from the early 2000s has undoubtedly contributed to financial development. At the same time, the impact of the global financial crisis on financial sector stability has been moderate in most sub-Saharan African countries (Mlachila, Park, and Yabara 2013), possibly also reflecting the region's relatively low financial integration. In fact, the main financial soundness indicators have improved compared with a decade ago (Mecagni,

Figure 3.8. Sub-Saharan Africa: Financial Soundness Indicators, 2006–14
(Percent)



Sources: Country authorities; and IMF staff estimates.

Marchettini, and Maino 2015). However, in the last five years, financial soundness indicators deteriorated somewhat, with capital adequacy ratios staying flat at best and nonperforming loans continuously rising. More recently, the decline in commodity prices, tighter external financing conditions, and exchange rate depreciations have exerted further pressures on various dimensions of financial soundness, in particular in commodity-exporting countries (Chapter 1). This could be a harbinger of a slower pace of financial development in the medium term.

Progress in supervisory standards and implementation of deposit insurance schemes varies substantially across the region (Enoch, Mathieu, and Mecagni 2015; Mecagni, Marchettini, and Maino 2015; Table 3.1). Most countries have already moved to international reporting standards or plan to move toward them in the short term, while only six countries still rely on national

Table 3.1. Sub-Saharan Africa: Financial Sector Supervisory Standards

	Accounting Standard	Capital Adequacy Standard[1]	Deposit Insurance	Asset Classification[2]
Angola	National	No Basel II yet	No	< 90 days
Botswana	IFRS	Basel II in progress	No	90 days
Burundi	IFRS Plan	Basel II in progress	No	> 90 days
Cabo Verde	IFRS	Basel II in progress	No	< 90 days
CEMAC	IFRS Plan	No Basel II yet	Implemented	> 90 days
Comoros	National	Basel II in progress	No	N/A
Congo, Dem. Rep.	National	No Basel II yet	No	90 days
Eritrea	N/A	N/A	No	N/A
Ethiopia	IFRS Plan	No Basel II yet	No	90 days
Gambia	IFRS Plan	No Basel II yet	No	90 days
Ghana	IFRS	No Basel II yet	No	90 days
Guinea	National	No Basel II yet	No	N/A
Kenya	IFRS	Parts of Basel II/III	Implemented	90 days
Lesotho	IFRS	No Basel II yet	No	90 days
Liberia	IFRS	Basel II in progress	No	90 days
Madagascar	National	No Basel II yet	No	90 days
Malawi	IFRS	Basel II	No	90 days
Mauritius	IFRS	Basel II	No	90 days
Mozambique	IFRS	Basel II	No	> 90 days
Namibia	IFRS	Parts of Basel II	No	90 days
Nigeria	IFRS	Basel II in progress	Implemented	90 days
Rwanda	IFRS	Basel II in progress	No	90 days
São Tomé and Príncipe	IFRS Plan	Basel II in progress	No	N/A
Seychelles	IFRS Plan	No Basel II yet	No	90 days
Sierra Leone	IFRS	No Basel II yet	No	90 days
South Africa	IFRS	Basel III	No	90 days
South Sudan	National	No Basel II yet	No	N/A
Swaziland	IFRS	No Basel II yet	No	90 days
Uganda	IFRS	No Basel II yet	Implemented	90 days
Tanzania	IFRS	No Basel II yet	Implemented	90 days
WAEMU	IFRS Plan	No Basel II yet	No	> 90 days
Zambia	IFRS	No Basel II yet	No	90 days
Zimbabwe	IFRS	Basel II in progress	Implemented	91 days

Sources: Enoch, Mathieu, and Mecagni (2015); Mecagni, Marchettini, and Maino (2015).

Note: CEMAC = Economic and Monetary Community of Central Africa; IFRS = internatinal financial reporting standards; N/A = not available.; WAEMU = West African Economic and Monetary Union.

[1] The Financial Stability Institute conducts a survey on the current status report on implementation of Basel II, Basel 2.5, and Basel III for non-Basel Committee on Banking Supervision/non-European Union jurisdictions and publishes unedited responses. The column is based for Basel II on answers to Pillar 1 (standardized approach of credit risk, basic indicator approach, and standardized approach for operational risk), Pillar 2, and Pillar 3.

[2] This category indicates the threshold of "number of days in arrears" after which loans are classified as nonperforming loans.

standards (including Angola, Guinea, and South Sudan). However, only a few countries and one monetary union have thus far implemented deposit insurance schemes (in the Economic and Monetary Community of Central African States, CEMAC, as well as Kenya, Nigeria, Tanzania, Uganda, and Zimbabwe). Basel II standards have been implemented only in Malawi, Mauritius, Mozambique, and South Africa.

Likewise, enforcement of prudential standards is quite weak in some cases, and the adoption of stricter financial standards in the future is likely to face implementation hurdles. Prudential standards are insufficiently enforced in many of the region's countries. For example, though the West African Economic and Monetary Union's (WAEMU's) Banking Commission has put considerable effort into building operational capacity and enhancing banking supervision in the past few years, half of the WAEMU's member countries do not comply with the regionally required regulatory (Basel I) capital adequacy ratio of 8 percent (IMF 2015f). This highlights that more ambitious standards in the future may face the risk of weak implementation capacity.

The rapid expansion of PABs brings new opportunities, but it also poses more risks. The role of PABs in enhancing financial intermediation, promoting greater economic integration, and fostering innovation is critical. However, there are also risks related to their systemic importance and interconnectedness. The most important risk is related to the lack of adequate supervisory oversight on a consolidated basis. At the same time, some banks have weak internal governance frameworks. These problems need to be addressed to mitigate systemic risks that could endanger financial development.

The next section examines what the region's potential for further improvement with respect to financial development implies in terms of growth and growth volatility.

TO WHAT EXTENT HAS FINANCIAL DEVELOPMENT BOOSTED GROWTH AND LOWERED ITS VOLATILITY?

Empirical estimates suggest that financial development has supported growth and reduced its volatility in sub-Saharan Africa. It has facilitated other economic policies in enhancing growth and stabilizing the economy. However, the region's financial development still performs below the benchmark level. Raising the median financial development index to its benchmark value could lead to an increase in growth by about 1½ percentage points. The results confirm the salutary effect on reducing the volatility of growth and other macroeconomic variables. However, countries need to be vigilant about the emerging macro-financial risks to effectively manage the risks associated with financial development.

Catching up with the structural financial development benchmark

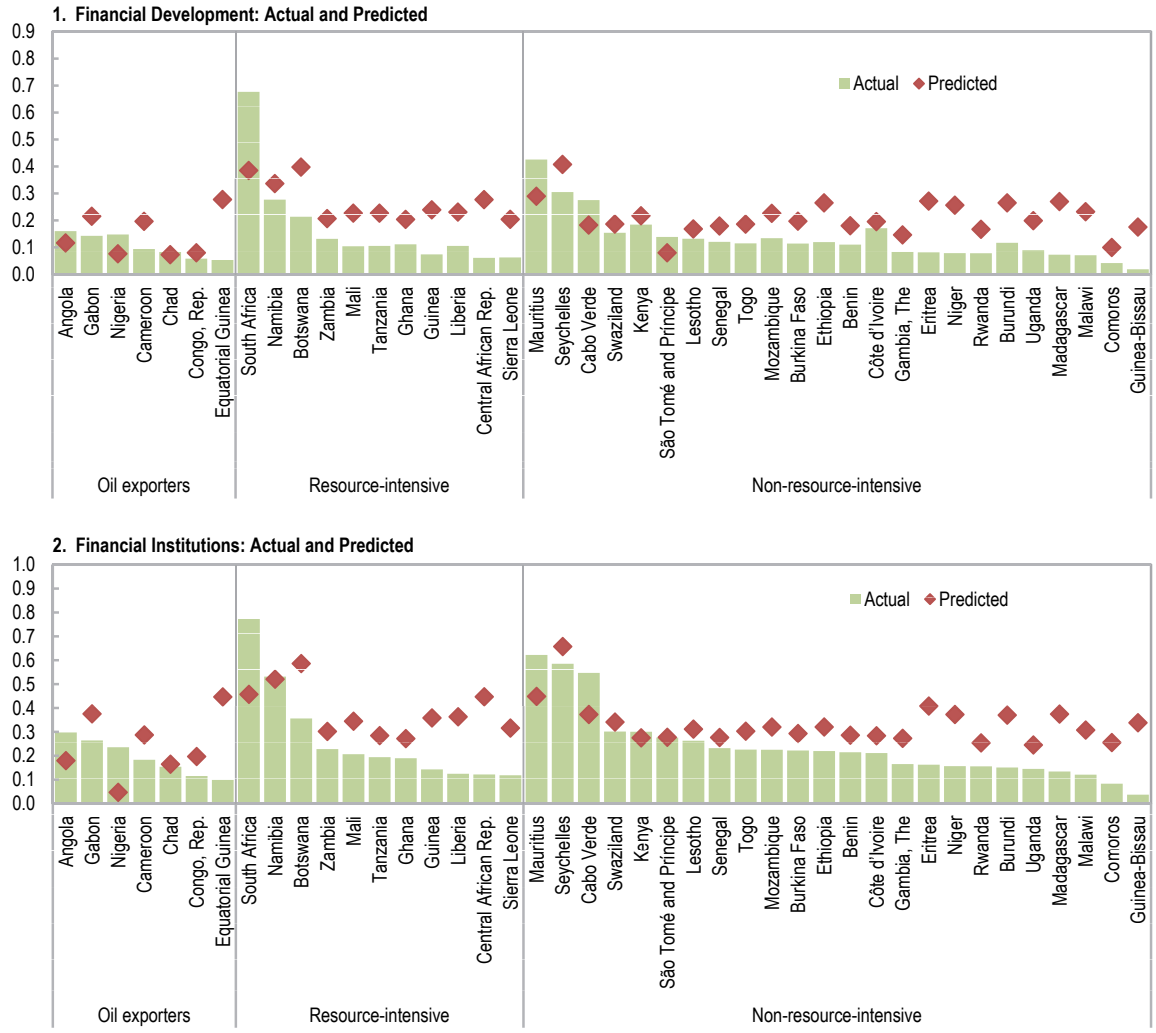
The level of financial development in many sub-Saharan African countries is below the statistical benchmark (Figure 3.9).

- An empirical analysis of 152 countries from 1980 to 2013 helps obtain benchmark levels of financial development consistent with individual countries' structural characteristics.[1] These fundamentals abstract from countries' institutional capacity or policies, and could therefore be interpreted as a potential level that countries with similar characteristics have accomplished. The next section explores the factors that could be driving the differences between the gaps.

[1] An index of financial development is taken as the dependent variable. Structural characteristics include log of real GDP per capita and its square to account for nonlinearities, population, population density, the age-dependency ratio to account for different saving behaviors across income groups, dummies for oil exporters and legal origin, and time dummies to capture the global macroeconomic environment. IMF (2015a) follows a similar approach with a different financial development index. Barajas and others (2013) used a similarly structured regression to benchmark countries' private-sector-credit-to-GDP ratio. Such statistical benchmarking has been applied to specific country groups in various cases (for example, Alter and Yontcheva 2015; Newiak and Awad 2015). Similar results were obtained when financial institutions and financial markets were examined separately.

- The results suggest that financial development in the region is generally below the benchmark level. Relatively fast financial development over the past decade has led to a catch-up or even surpassing the benchmark only in middle-income countries that expanded financial institutions beyond the banking sector (Cabo Verde, Mauritius, South Africa), Côte d'Ivoire, and large oil exporters (Angola, Nigeria). For the latter group, benchmark levels are typically comparatively low because oil production is often self-financed and/or from offshore sources. As a result, the sector contributes less to financial sector development, than other sectors. Among others, Angola has seen particularly rapid development, with bank deposits increasing from 21 percent to 49 percent of GDP, and bank loans rising from 5 percent to 24 percent of GDP between 2005 and 2013, and has consequently surpassed the benchmark level (Takebe 2015). A similar exercise that creates a benchmark for the financial institutions component of the index yields very similar results.

Figure 3.9. Sub-Saharan Africa: Actual and Predicted Financial Development, 2013
(1 = most developed; 0 = least developed)



Sources: Sahay and others (2015b); and IMF staff estimates.

Financial development has supported growth and reduced its volatility...

Empirical evidence suggests that financial development supports growth in the region, especially at lower levels of financial development, although the effect on volatility is less robust. Many studies find a positive impact, but suggest the existence of a threshold beyond which financial development is detrimental to growth (Arcand, Berkes, and Panizza 2012; Ceccheti and Kharoubi 2015; Sahay and others 2015b). However, most countries in the region are well below the threshold to exhibit adverse growth effects.[2] The literature has also shown that financial development helps dampen the impact of adverse shocks by alleviating firms' and households' borrowing constraints (Caballero and Krishnamurty 2001), and promoting diversification and management of risk (Acemoglu and Zilibotti 1997). However, the financial accelerator mechanism may propagate and amplify the impact of real shocks in an environment with credit market imperfections (Bernanke, Gertler, and Gilchrist 1999).

Deeper financial development is associated with higher growth in sub-Saharan African countries, with the size of the effect varying across countries. This section assesses the impact of financial development on growth[3] in sub-Saharan Africa following Sahay and others (2015b), and includes factors specific to the region, such as the effect of aid flows and of the share of the agricultural sector as a proxy for the primary and informal sectors. The results show a positive impact of financial development on growth (Table 3.2), and thus there is further scope for financial deepening in the region to better support growth, given that most sub-Saharan African countries are well below the inflection point for potential adverse effects. In particular, raising the median financial development index to its benchmark value is associated with an increase in growth by about 1½ percentage points.

Table 3.2. Sub-Saharan Africa: GMM Estimation Results of Impact of Financial Development on Growth

	Model 1	Model 2
Financial development index	27.00 **	
	(11.6)	
Financial development index (squared)	–33.83 *	
	(19.9)	
Financial institution index		9.956 ***
		(3.51)
Financial market index		0.794
		(19.19)
Financial institution index * financial market index		–19.590
		(24.82)
Observations	216	216
Number of countries	39	39

Source: IMF staff estimates.

Note: The dependent variable is real GDP growth, averaged over nonoverlapping five-year periods. Data cover more than 43 sub-Saharan African countries (SSA), but availability varies by variables. Following Sahay and others (2015b), additional control variables include initial per capita GDP, education enrollment, and share of government consumption in GDP. The share of agriculture in GDP is added to better reflect its significance in SSA. Given the weak coefficient on the square terms, and that most SSA countries are at the relatively low level of financial development below the threshold to exhibit negative growth impact as discussed in the text, the model on the component index is run in level only in favor of parsimony. Model 1 represents the overall effect of financial development; model 2 represents the effect of dimensions of financial development. GMM = generalized method of moments.

Robust standard errors in parentheses; *** p<0.01, ** p<0.05,* p<0.1.

The impact on growth tends to be stronger for countries at lower levels of financial development. For low-income countries, with larger estimated gaps to the benchmark, the potential increase in growth is almost 2 percentage points, while the growth boost for oil producers is at about ½ percentage point. In other words, raising the index of Niger (0.08) to the level of Kenya (0.18) generates a positive growth impact of 2 percentage points, while a further increase to the level of Namibia (0.28) adds 1 percentage point.[4] The

[2]Arcand, Berkes, and Panizza (2012) find evidence of an adverse impact of finance on growth above a threshold of private credit to GDP of 100 percent, far above the actual level of sub-Saharan African countries.

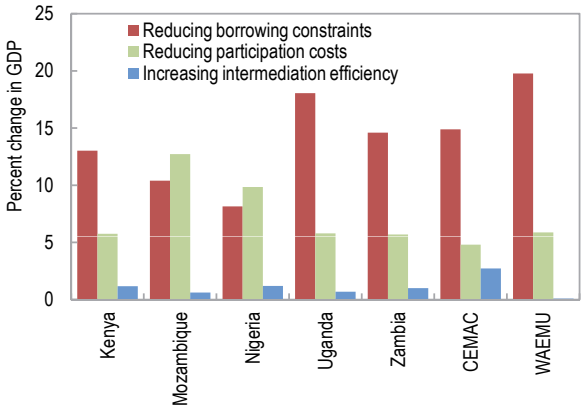
[3] As identified in the literature on finance and growth (for example, Levine 2005 and Beck 2008), the empirical analysis encounters significant endogeneity issues. Following the literature, our analysis uses the panel generalized method of moments estimator, which uses lagged variables as instruments to minimize the problem.

[4] To obtain the growth impact arising from a baseline financial development level to a higher one while holding other conditions equal, a new growth rate is calculated using the new index and coefficients in Table 3.2, while the baseline growth rate is calculated using the existing index. Thus the difference between the two growth rates can be considered as a one-off impact owing to the improvement of the financial development index. The estimates for country groups are based on the median index for the corresponding group.

results also show that for a median sub-Saharan African country, most of the growth effect is from the support of financial institutions, while that from financial markets is positive but not significant, likely undermined by the lack of financial infrastructure and competition. The results are illustrative and should be taken with caution given the short history of financial market development outside of the banking sector among most of these countries.

The findings of recent microfounded studies corroborate the salutary growth impact of relaxing structural financial constraints. The October 2015 *Regional Economic Outlook: Sub-Saharan Africa* summarizes the benefits of removing the most binding constraints to financial inclusion on GDP, TFP, and inequality in a set of countries (Kenya, Mozambique, Nigeria, Uganda, and Zambia) and two monetary unions using the general equilibrium framework of Dabla-Norris and others (2015). The study identified borrowing constraints—limited enforcement of contracts and asymmetric information that results in high collateral and smaller leverage ratios—as the most relevant hurdles to firms' access to finance. Relaxing these borrowing constraints could increase GDP levels by 8 percent to 20 percent through a substantial improvement in TFP over the long term (Figure 3.10). Lowering participation costs—factors limiting access to credit such as distance to banks or ATMs and documentation to apply for a loan—also modestly contribute to growth.

Figure 3.10. Long-Term Impact on GDP of Relaxing Financial Constraints

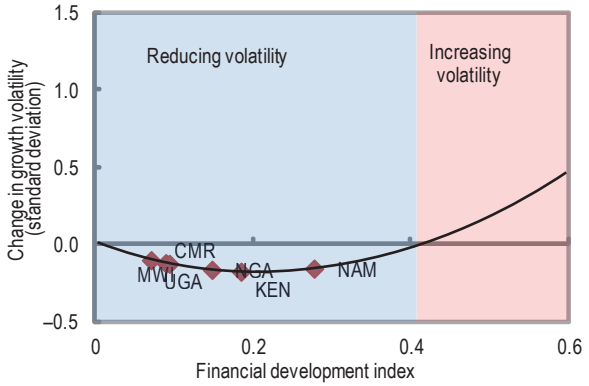


Sources: Dabla-Norris and others (2015); IMF country staff reports; and IMF staff calculations.

Note: CEMAC = Economic and Monetary Community of Central Africa; WAEMU = West African Economic and Monetary Union.

The relationship between financial development and growth volatility appears to be nonlinear in the vast majority of countries in the region. Following Sahay and others (2015b) and including region-specific control variables, we find that the relationship between financial development and volatility is nonlinear in sub-Saharan African countries (Table 3.3), similar to findings in other regions. Financial development initially smoothes growth volatility by relaxing credit constraints on firms and households, and providing them with a variety of instruments to withstand adverse shocks. However, as the financial sector deepens, its contribution to reducing volatility declines because a deeper financial sector increases the propagation and amplification of shocks. However, the majority of countries in the region are below the threshold (estimated around 0.4, Figure 3.11) beyond which financial development starts increasing growth volatility. The empirical analysis suggests that—under the current institutional setting and structural characteristics—this threshold is lower

Figure 3.11. Sub-Saharan Africa: Impact of Financial Development on Growth Volatility



Source: IMF staff calculations.

Note: See page 82 for country abbreviations. Based on the regression coefficients, this chart illustrates the simulated marginal impact on the standard deviation of real GDP growth rate (five-year rolling standard deviation) of a 10 percent increase in a country's financial development index. The U-shaped trend line shows that the reduction on volatility is stronger for countries with lower index level and still favorable but less strong for countries with already comparatively higher level of financial development (blue-shaded area). Beyond a certain financial development threshold, further increase in the index would increase growth volatility (red-shaded area). The chart also reports pilot countries under intensive macrofinancial surveillance at the IMF (Namibia, Malawi, Uganda) and with more advanced financial sectors, including Kenya, and Nigeria.

for sub-Saharan Africa compared to that of other countries. This presumably reflects the insufficiency of the region's legal and institutional frameworks required to fully reap the benefits of deeper financial systems. Moreover, the region is subject to more frequent and larger shocks than others, specially those related to international commodity prices (see Chapter 2).

The analysis has also been extended to investment volatility and to different components of financial development. The results suggest that financial development reduces investment growth volatility but only up to a certain point for sub-Saharan African countries, although it increases investment fluctuations in other regions of the world (Table 3.3). The pronounced reduction of investment volatility may be attributed to the greater access to credit for large firms, which account for the bulk of investment in sub-Saharan African countries. Both financial institutions and financial markets are also found to dampen growth volatility but financial institutions are found to play a prominent role, consistent with their level of development in sub-Saharan African countries, as elaborated ealier. This relationship holds also for investment growth though in a linear fashion.

...but requires more vigilance against macrofinancial risks

Recent country studies in the region highlight a number of emerging macrofinancial risks. For example, in the WAEMU, a combination of widening fiscal imbalances and accommodative monetary policy by the regional central bank

Table 3.3. Sub-Saharan Africa: Estimation Results of Impact of Financial Development on Growth Volatility

Dependent variable: volatility of	GDP growth		Investment-to-GDP growth	
Financial development index	–7.589 ***		157.1 ***	
	(1.118)		(2.741)	
Financial development index (squared term)	3.739 ***		–280.1 ***	
	(1.318)		(3.519)	
Financial institution index		–5.236 ***		–24.67 ***
		(0.664)		(0.768)
Financial institution index (squared term)		5.03 ***		
		(0.910)		
Financial market index		–2.967 *		–38.80 ***
		(1.529)		(1.024)
Financial market index (squared term)		–0.106		
		(1.688)		
SSA* financial development index	–9.706 ***		–246.3 ***	
	(1.963)		(10.06)	
SSA* financial development index (squared term)	16.31 ***		404.6 ***	
	(2.679)		(51.59)	
SSA* financial institution index		–4.592 ***		–9.052 ***
		(1.265)		(3.253)
SSA* financial institution index (squared term)		7.187 ***		
		(1.970)		
SSA* financial market index		–2.290		32.65 ***
		(4.228)		(8.731)
SSA* financial market index (squared term)		2.373		
		(7.077)		
Observations	1,173	1,173	1,083	1,083
Number of countries	95	95	89	89

Sources: Sahay and others (2015b); and IMF staff estimates.

Note: Dependent variable: five-year rolling standard deviation of real GDP growth and growth of investment-to-GDP ratio. Additional control variables: five-year lags of GDP per capita, trade and financial openness, energy exports (percent of GDP), volatility of foreign growth, gross capital inflows in the region excluding country in question, terms-of-trade changes, polity index, growth in GDP per capita, government balance, and aid to GDP growth volatility for 1995–2013. The high magnitude of financial development variables' coefficients on investment volatility could be explained by the substantial volatility of investment across countries and over time. In addition, although the aggregate coefficient is positive for the global sample, the financial development coefficient for sub-Saharan African countries (FD + FDxSSA) is statistically significant and negative while the coefficient on the square term is statistically significant and positive at the 5 percent level.

Robust standard errors in parentheses; *** p<0.01, ** p<0.05,* p<0.1.

(BCEAO) has allowed banks to significantly increase holdings of government securities to take advantage of the interest rate margin of government bonds over the low BCEAO refinancing rate, raising the sovereign-financial risk (IMF 2015f; and see Chapter 1).[5] In Malawi, inadequate fiscal adjustment led to the accumulation of domestic payment arrears and increased recourse to domestic financing, resulting in higher nonperforming loans and higher financial sector exposure to the government, and heightened economic uncertainty (IMF 2015c). In Namibia, a booming housing market has been posing a great risk to banks and could potentially lead to a fiscal risk. In the CEMAC, Namibia, and Uganda, banks' credit growth has been accompanied by significant concentration risks (IMF 2015b, 2015d, 2015e). Moreover, in Uganda, high dollarization in loans and deposits poses potential credit risks because of possible currency mismatches in borrowers' balance sheets. These developments could initiate bank and sovereign risk feedback loops. If such a risk were to materialize, it could be easily exacerbated given the lack of enforcement of prudential rules and a weak judiciary system, and weak crisis resolution frameworks in the region.

In summary, financial development has supported growth and reduced its volatility in sub-Saharan Africa. However, the region's level of financial development generally stayed below the benchmark level. If the region can raise the median financial development index to the benchmark level, its growth could be increased. The next section investigates how the region can approach the benchmark level of financial development.

[5] Government debt has increased from 18 percent to 22 percent of banks' total assets between 2011 and 2014 in the WAEMU region.

WHAT DRIVES OR INHIBITS FINANCIAL DEVELOPMENT IN SUB-SAHARAN AFRICA?

This section finds that sound macroeconomic fundamentals have been driving financial development in sub-Saharan African countries, while weak institutional quality has been hindering it in many countries in the region. Improvements in legal frameworks and corporate governance seem to be the most promising avenues to boost financial development in the region.

Macroeconomic fundamentals have been driving financial development in the region…

Macroeconomic fundamentals are the main drivers of financial development in the region. Drawing on the existing literature, this section analyzes the drivers of financial development in developing economies, with a special focus on sub-Saharan African countries. In particular, following the literature (for example, Kose, Prasad, and Terrones 2006), we investigate the effects from two key aspects of globalization—trade and financial integration.[6] The following are the key findings (Table 3.4):

- *Macroeconomic fundamentals* positively affect financial development in developing economies in general and for the region in particular. High inflation, as a proxy for macroeconomic instability, negatively affects financial development.[7] Also, the income effect is significant, indicating more scope for financial development as the middle class starts to emerge in sub-Saharan African countries.
- *International trade integration*, measured by the share of total exports and imports of goods and services in GDP, positively affects financial development in developing economies, but

[6] A generalized method of moments estimation was employed to mitigate the problems caused by the endogeneity. Nevertheless, the lack of consensus on the theory or the factors driving financial development suggests some uncertainty in model specification, and thus the results from this exploratory analysis should be interpreted with caution.

[7] There are many other candidates for a proxy for macroeconomic stability, but inflation is the most widely used measure of macroeconomic stability.

the effects almost disappear in the region (in contrast with the theory of financial development by Rajan and Zingales 2003).[8] However, it is noteworthy that the effect from trade integration is much stronger than that from financial integration overall in developing economies, pointing to a large potential opportunity sub-Saharan African countries might have missed.

- Similarly, international financial integration, measured by the share of international assets and liabilities as a share of GDP—reflecting a country's de facto degree of capital account openness—positively affects financial development in developing economies and even more strongly affects financial development in sub-Saharan African countries.
- Lower country risk appears to be conducive to financial development in developing economies, but the positive effects diminish in the region. It might suggest that financial market participants demand a higher risk premium in sub-Saharan African countries, even for the same risk rating. Thus further institutional reform to address the country-specific bottlenecks in financial market information infrastructure to support market participants can further stimulate financial development.

To sum up, sub-Saharan Africa's financial developments relatively weak, and does not sufficiently benefit from international trade integration as in other regions. We therefore examine below the reasons for the underperformance of sub-Saharan African countries, and try to identify systematic patterns among them.

[8] Rajan and Zingales (2003) argued that incumbent interest groups oppose financial development because the greater competition erodes their rents. They claimed that opening of trade and finance weakens the incumbent power and reduces opposition to financial reform. Meanwhile, Svaleryd and Vlachos (2002) claimed that international financial integration might increase liquidity and reduce the cost of capital, and consequently foster financial development. Baltagi, Demetriades, and Law (2009) and Klein and Olivei (2008) empirically confirmed this theory in advanced and developing economies.

...but weak institutional quality has been inhibiting financial development in many of the region's countries

Recent evidence suggests that sub-Saharan African countries might be able to approach the benchmark level of financial development by improving institutional quality. Previous studies have generally shown that institutional quality is one of the leading explanations for financial underdevelopment in the region's countries. We therefore examine the relationship between institutional quality

Table 3.4. Sub-Saharan Africa: Drivers of Financial Development

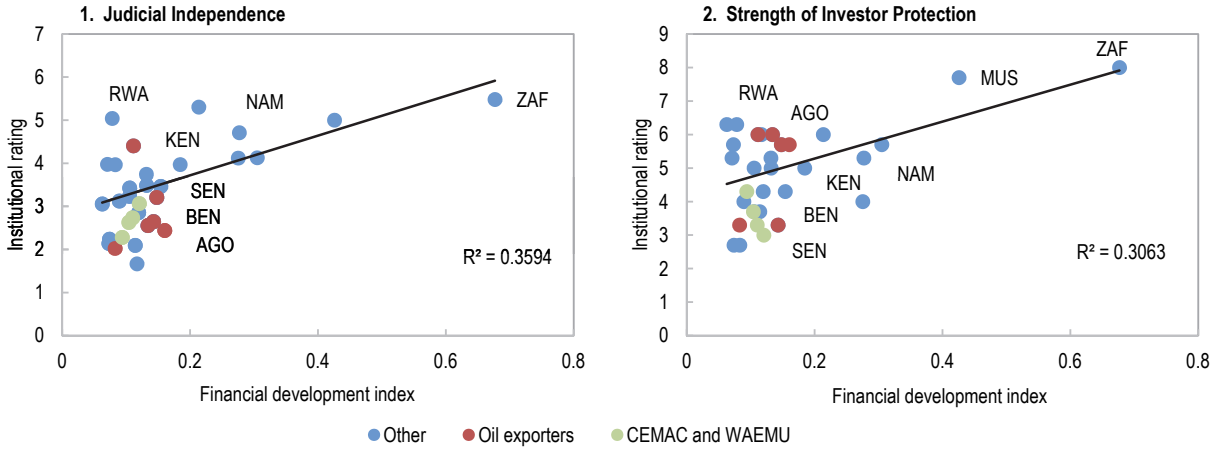
	GMM
Financial development index ($t-1$)	0.549 ***
	[0.017]
Capital account openness (de facto index, $t-1$)	0.005 **
	[0.002]
Trade openness index (total trade/GDP, $t-1$)	0.044 ***
	[0.006]
Real GDP per capita ($t-1$)	0.087 ***
	[0.007]
Inflation rate ($t-1$)	–0.021 ***
	[0.003]
ICRG county risk rating	0.123 ***
	[0.016]
SSA * capital account openness ($t-1$)	0.009 ***
	[0.003]
SSA * trade openness ($t-1$)	–0.042 ***
	[0.009]
SSA * inflation rate ($t-1$)	–0.017
	[0.014]
SSA * ICRG country risk rating	–0.105 ***
	[0.033]
Constant	–0.714 ***
	[0.046]
Observations	1,809
Number of countries	82

Source: IMF staff estimates.

Note: Based on panel regressions of data for 1980–2013 for about 90 developing countries (excluding oil exporters), although the number of observations vary depending on the variable. Interaction terms with sub-Saharan Africa (SSA) only show the incremental impact for the region's countries. In other words, the overall impact on sub-Saharan African countries should be evaluated by the sum of the coefficients for all developing countries and the coefficients on interaction terms. Including oil exporters does not qualitatively change the core results. ICRG = International Country Risk Guide; GMM = generalized method of moments.

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

Figure 3.12. Sub-Saharan Africa: Financial Development and Institutional Quality in 2013



Source: IMF staff estimates.
Note: See page 82 for country abbreviations. CEMAC = Economic and Monetary Community of Central Africa; WAEMU = West African Economic and Monetary Union.

and financial development using recent data.[9] Figure 3.12 shows that some types of institutional indicators are associated with the financial development index. It could suggest that improving institutional quality could help countries catch up in financial development. However, other factors also play a role. For example, some of the oil exporters (Angola, Nigeria) outperform the benchmarks because the availability of oil revenues is likely to have induced financial development despite their relatively weak institutional quality.

Some institutions seem to matter more than others

Sub-Saharan African countries could reap the benefits of financial development by focusing on improving legal frameworks and corporate governance. To derive more specific policy implications, we analyze empirically the effect of different institutional indicators in more detail.[10] The results reveal that many indicators of institutional quality can help reduce the negative gap to the financial development benchmark (Table 3.5). In particular, protecting minority shareholders' interests, strengthening judicial independence, and strengthening investor protection are important for achieving a country's benchmark level of financial development in the area of legal frameworks. In the area of corporate governance, strengthening of auditing and reporting standards appears essential. In a similar vein, country studies (for example, Alter and Yontcheva 2015; Cui, Dieterich, and Maino 2016; Newiak and Awad 2015) find specific constraints in financial market infrastructure, such as high collateral requirements and the lack of credit information and property registry, and have impeded financial deepening and inclusion in central and west Africa. Drawing on the above findings, the next section presents selected policy recommendations.

POLICY RECOMMENDATIONS

Although financial development has contributed to economic growth and its reduced volatility in sub-Saharan Africa, it is well below its benchmark. To reap the full benefits of financial development, in addition to maintaining overall macroeconomic stability, appropriate financial sector policies should be formulated and implemented, focusing on building institutions, promoting sound legal and regulatory frameworks, and broadening financial inclusion. That said, policymakers should be aware that this process takes time. They also need to recognize that

[9] The institutional quality index was obtained from the Global Competitiveness Index's Pillar 1 (Institution) by the World Economic Forum. Using alternative institutional indicators, such as the World Bank's Country Policy and Institutional Assessment produces similar results.

[10] The same exercise was conducted with the World Bank's Doing Business indicators, and the institutional indices of Polity IV. The results are similar but less robust than the results using the Global Competitiveness Index.

Table 3.5. Sub-Saharan Africa: Top Ranking of Coefficients between the Distance to the Benchmark and Detailed Institutional Quality

Detailed institutional quality	Coefficient with the distance to the benchmark	*R*-squared	Ranking of coefficient [1]
Protection of minority shareholders' interests	0.0614 **	0.153	1
Strength of auditing and reporting standards	0.0468 **	0.158	2
Efficiency of legal framework in challenging regulations	0.0424	0.073	3
Efficiency of legal framework in settling disputes	0.0400	0.079	4
Transparency of government policymaking	0.0385	0.044	5
Efficacy of corporate boards	0.0379	0.040	6
Property rights	0.0346	0.072	7
Judicial independence	0.0343 **	0.119	8
Intellectual property protection	0.0326	0.064	9
Irregular payments and bribes	0.0326	0.079	9
Ethical behavior of firms	0.0309	0.032	11
Strength of investor protection	0.0251 *	0.118	12

Source: IMF staff estimates.

[1] Coefficients are ranked from high to low as higher coefficients help to improve financial development in a more efficient way.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

promoting financial development requires agility and careful management, particularly in periods of financial liberalization, regional integration, and when adopting technological innovations (such as mobile banking). As financial systems evolve, existing rules and regulations need to be adjusted to address emerging risks.

The policies—appropriately calibrated for sub-Saharan Africa—could include:

- *Providing strong legal and institutional frameworks and promoting sound corporate governance* (Gulde and others 2006). Strengthening legal and institutional frameworks, including protecting the interests of minority shareholders, fostering contract enforcement, and judicial independence, are critical for creating a conducive environment in which the financial sector can develop and thrive. Enhancing credit information systems and reducing costs related to prohibitively high collateral requirements would address constraints to credit growth and facilitate financial inclusion. Improving corporate governance and information disclosure, especially by aligning standards in accounting, auditing, and financial reporting with international best practices, would help to reduce the negative gap to the financial development benchmark.
- Strengthening supervision, including cross-border oversight and on a consolidated basis. Because enforcement of prudential standards remains weak in some countries, providing supervisors with more enforcement power and strengthening the capacity of the supervisory agencies should come to the fore of the agenda. The rapid expansion of pan-African banks calls for enhancing cross-border oversight, and on a consolidated basis, which should be done by improving cross-country collaboration among home and host supervisors, and inter-institutional cooperation within countries. Expediting harmonization of regulations and supervisory procedures and closing gaps in crisis management should also be addressed in a timely manner. Establishing an appropriate mechanism for resolving nonviable institutions (for example, through a special resolution regime) and ensuring adequate functioning of deposit insurance schemes is critical for mitigating potential risks of spillovers.
- *Introducing an enabling regulatory environment to broaden financial inclusion*. As indicated by recent evidence, particularly in mobile banking, low transaction costs and technological innovations played a particularly important role in bringing a large share of the population into the financial system net, particularly in east Africa. At the same time, the risks related to

rapid growth of mobile money transactions and the increasing complexity of these transactions should be monitored carefully by the regulators. As the mobile money transactions become increasingly popular in the low-income segment of the population, it is important to strengthen protection of householders' scarce funds.

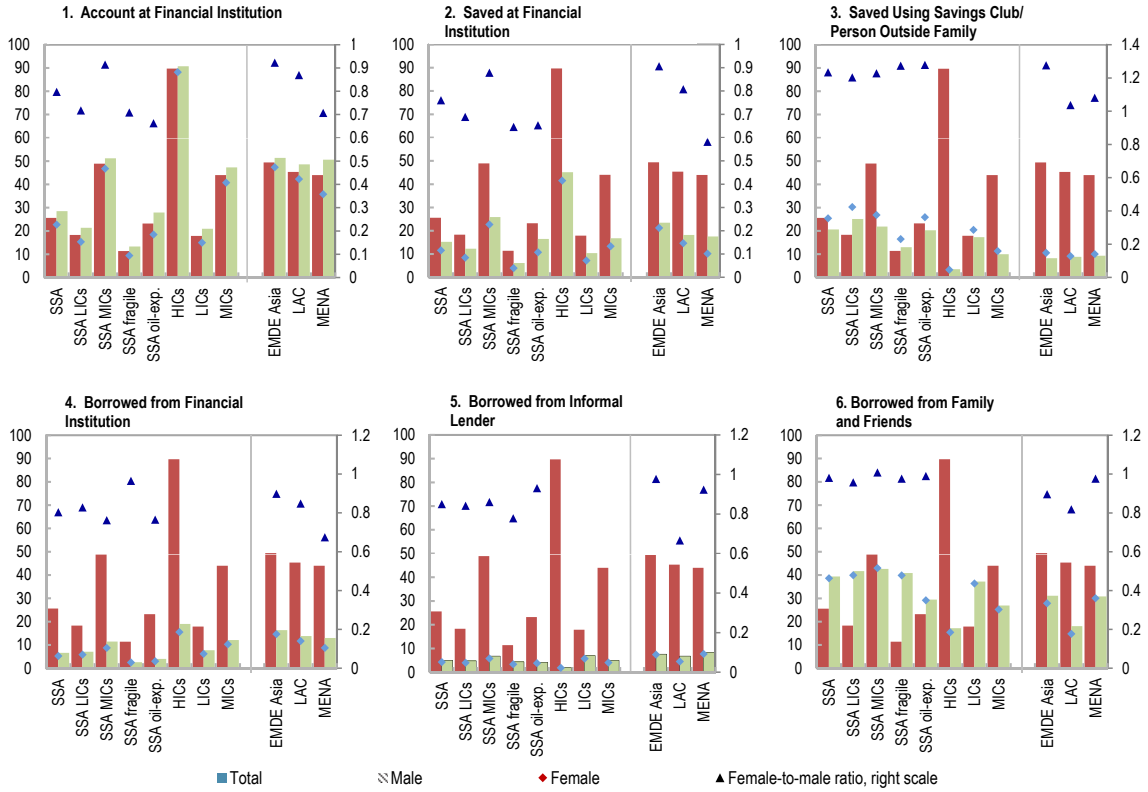
- *Supporting bank competition is also essential for making financial services more affordable and positively contributes to financial inclusion and higher efficiency of the financial system*.

The main drivers of competition are entry (regulations on licensing) and exit policies (resolution regimes); therefore, introducing policies that allow the entry of well-capitalized institutions and the timely exit of insolvent ones is an important precondition for creating a competitive environment in the sector (World Bank 2012). As indicated by empirical studies, fostering competition may in fact require more regulation, particularly at the early stages of financial development (Chami, Fullenkamp, and Sharma 2010).

Box 3.1. Gender Inequality in Financial Access and Macroeconomic Outcomes

*Sub-Saharan Africa lags behind other developing regions in terms of overall financial access as well as gender aspects of financial inclusion (*Figure 3.1.1). Access to financial services is generally lower in sub-Saharan Africa compared with other developing regions, in particular in the region's fragile states and low-income countries. In addition, access is particularly low for women, with gender gaps of most of the region's country groups being higher than in emerging and developing Asia or Latin America and the Caribbean. The region's fragile states are an exception but only because access levels are (equally) low for both genders. The gender gap is lower for informal activities, with more women than men saving in a savings club or with a person outside the family, and men and women appear to borrow equally from their family and friends.

Figure 3.1.1. Sub-Saharan Africa: Indicators of Financial Inclusion, 2014



Source: World Bank, Global Findex 2014.

Note: EMDE Asia = emerging market and developing Asia; HIC = high-income country; LIC = low-income country; MIC = middle-income country; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SSA = sub-Saharan Africa.

Narrower gender gaps in financial inclusion are associated with both higher development and more equitable outcomes (Figure 3.1.2).

- More equal access for women and men to financial services, defined here as having an account at a formal financial institution, is correlated with higher economic development, as measured by higher GDP per capita or lower poverty rates.

Prepared by Corinne Delechat, Monique Newiak, and Fan Yang.

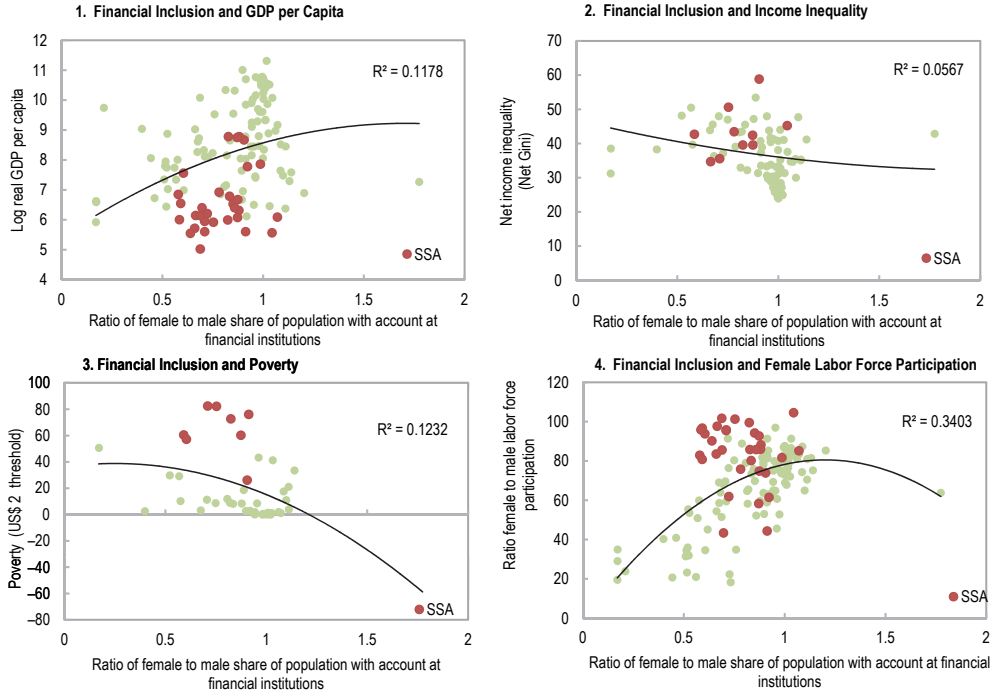
Box 3.1. *(continued)*

- It implies more equal opportunities for men and women, and is therefore associated with a more equal income distribution (lower net Gini coefficient).
- Finally, it is also associated with more equal labor force participation (LFP) rates between men and women. More equal LFP rates, in turn, have been previously associated with higher growth (Cuberes and Teignier forthcoming) and a more equal income distribution (Gonzales and others 2015b).

More equality in financial inclusion for men and women is significantly associated with lower income inequality (Table 3.1.1). Lower financial access among different groups of the population distorts the allocation of resources because it restricts investment in human and physical capital to the wealthier parts of the population (Galor and Zeira 1993). Using a broader index of formal financial inclusion in a cross-section of countries, we find that higher gender equality in financial inclusion is associated with lower income inequality. This effect comes on top of standard drivers of income inequality such as the structure of the economy, government expenditure, financial depth, and the level of development.

Gender equality in financial inclusion may be influencing income inequality through its effect on female LFP. Theoretically, financial inclusion can empower women economically and therefore contribute to higher female LFP. An account at a financial institution provides women with a place outside the home to store money safely (CGAP 2015), and access to borrowing can allow women to start a business, thus contributing to increases in entrepreneurship and self-employment. These channels are particularly important in sub-Saharan Africa where women are overrepresented in the informal sector, with a large part of the population in nonwage employment.

Figure 3.1.2. Gender Equality in Financial Inclusion and Macroeconomic Outcomes



Sources: Solt (2014); World Bank, Global Findex 2014; and World Bank, World Development Indicators.
Note: SSA = sub-Saharan Africa.

Box 3.1. *(continued)*

Indeed, the results from an empirical cross-country analysis suggest that greater gender equality in financial inclusion is significantly and positively associated with equality in LFP rates (Table 3.1.2). This finding holds when controlling previously identified determinants of female LFP such as the level of development (Duflo 2011; Tsani and others 2012), the gender gap in education (Eckstein and Lifshitz 2011; Steinberg and Nakane 2012), fertility rate (Mishra and Smyth 2010), the male-female age differential at the time of the first marriage, and an index of women's rights (Gonzales and others 2015a). The finding is particularly strong for sub-Saharan Africa, where a 10 percent reduction in the gender gap in financial inclusion is associated with a decline in the LFP gap by more than 4 percentage points.

Table 3.1.1. Determinants of Income Inequality

Variables	(1)	(2)	(3)	(4)	(5)
Financial inclusion gap	–16.038 ***	–15.874 ***	–12.577 **	–12.628 **	–9.828 **
	(5.52)	(5.56)	(5.02)	(4.96)	(4.81)
GDP per capita	–4.065 ***	–5.043 ***	–3.801 ***	–6.923 ***	–7.994 ***
	(0.75)	(1.18)	(1.1)	(2.22)	(2.14)
Financial depth		4.449	15.149 ***	14.029 ***	14.461 ***
		(4.77)	(4.96)	(4.95)	(4.7)
Financial depth * advanced economies			–13.615 ***	–11.488 ***	–7.248 **
			(3.24)	(3.46)	(3.62)
Agriculture share of GDP				–0.359	–0.529 **
				(0.22)	(0.22)
Government consumption expenditure					–0.524 ***
					(0.19)
Constant	89.459 ***	96.596 ***	80.421 ***	113.097 ***	129.694 ***
	(7.58)	(10.04)	(9.75)	(22.45)	(22.12)
Observations	70	69	69	69	69
R-squared	0.42	0.43	0.55	0.57	0.62

Source: IMF staff estimates.

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 3.1.2. Determinants of Female Labor Force Participation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financial inclusion gap	0.491 ***	0.399 ***	0.319 ***	0.220 ***	0.235 ***	0.241 ***	0.260 ***	0.211 ***
	(0.068)	(0.075)	(0.078)	(0.077)	(0.078)	(0.078)	(0.070)	(0.075)
GDP per capita	–0.483 ***	–0.67 ***	–0.489 ***	–0.708 ***	–0.736 ***	–0.678 ***	–0.468 ***	–0.529 ***
	(0.15)	(0.159)	(0.157)	(0.166)	(0.171)	(0.191)	(0.177)	(0.188)
GDP per capita squared	0.025 ***	0.034 ***	0.023 ***	0.036 ***	0.037 ***	0.034 ***	0.023 **	0.026 ***
	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.01)	(0.01)	(0.01)
Education gap		0.324 ***	0.168	0.219 **	0.202 *	0.206 **	0.013	0.087
		(0.1)	(0.104)	(0.101)	(0.102)	(0.103)	(0.101)	(0.105)
Marriage age differential			–0.044 ***	–0.022	–0.031 **	–0.033 **	–0.042 ***	–0.04 ***
			(0.013)	(0.014)	(0.014)	(0.015)	(0.013)	(0.014)
Equal rights to get a job (dummy)				0.177 ***				
				(0.047)				
Female legal rights index					0.045 ***	0.049 ***	0.033 **	0.039 **
					(0.013)	(0.014)	(0.013)	(0.014)
Fertility rate						0.014	–0.05 **	–0.029 **
						(0.02)	(0.022)	(0.023)
SSA (dummy)							0.266 ***	
							(0.055)	
SSA * Financial inclusion gap								0.223 ***
								(0.071)
Constant	2.564 ***	3.339 ***	3.003 ***	3.719 ***	3.663 ***	3.292 ***	2.765 ***	2.936 ***
	(0.662)	(0.7)	(0.692)	(0.713)	(0.72)	(0.902)	(0.816)	(0.868)
Observations	137	122	107	99	99	99	99	99
R-squared	0.34	0.40	0.40	0.44	0.43	0.43	0.54	0.49

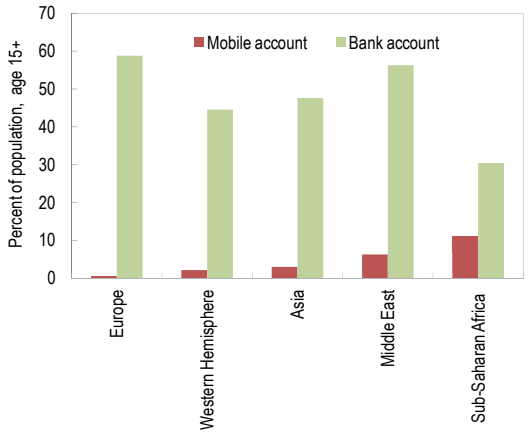
Source: IMF staff estimates.

Note: SSA = sub-Saharan Africa. Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Box 3.2. Supporting Financial Development and Inclusion Through Mobile Payments and Banking Services

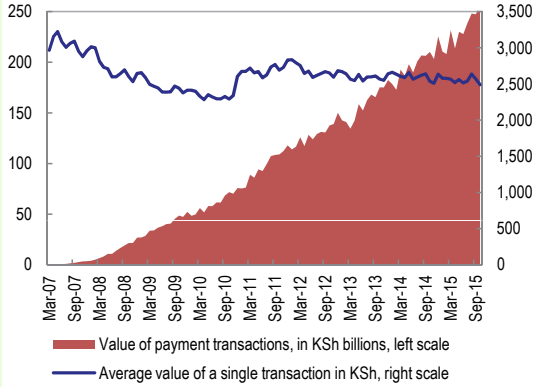
Sub-Saharan Africa leads in the adoption of mobile banking. In predominantly rural populations, traditional bank intermediaries do not reach sparsely populated areas, and costs of their services are frequently prohibitive for low-income households and small businesses. The recent surge in mobile money observed in many sub-Saharan African countries has been facilitated by low transaction costs, growing innovations, and a strong increase in mobile phone subscriptions. In 2014, the share of the population holding mobile bank accounts reached 11 percent in sub-Saharan Africa, almost twice as many as in any other regions (Figure 3.2.1).

Figure 3.2.1. Mobile Phone Subscriptions in 1999–2004



Source: World Bank, World Development Indicators.

Figure 3.2.2. Kenya: Development in Mobile Payments, 2007–15



Source: World Bank, Global Findex.

The successful experience of mobile operators in Kenya provides insights on how to leverage mobile technology to foster financial inclusion (Mbiti and Weil 2011; IMF 2012a). M-Pesa launched its first mobile phone application to facilitate microcredit repayments in 2007. While the company was experimenting with the microfinancing, it developed a framework for payments and savings. The number of mobile transactions grew rapidly, and quickly exceeded those of Western Union and via payment cards. The successful experience of M-Pesa helped to launch new products, such as M-Shwari and M-Kesho, which use the M-Pesa platform.[1] Although the average value of mobile payments in Kenya remains relatively small (at US$24—Figure 3.2.2), the system currently allows sending and withdrawing money at over 123,700 agents, compared with only approximately 1,440 bank branches and 2,700 ATMs. By end-2014, the value of mobile money transactions was higher (at 62 percent of GDP) than the outstanding deposits of the commercial banks (at 60 percent of GDP).

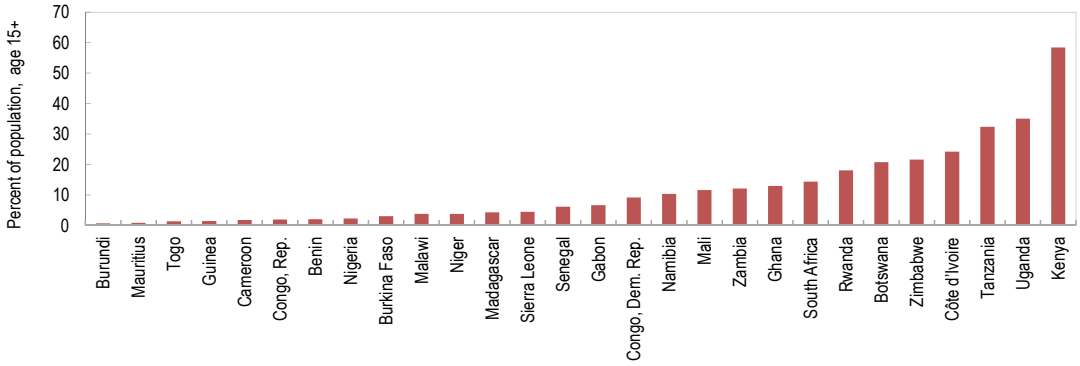
The growing provision of mobile payments to the previously unbanked population in Kenya had positive spillovers to other related areas. A number of factors facilitated the spread of services offered by M-Pesa, including inexpensive use of technology, and the policies allowing the operation of M-Pesa as a parallel payment system. The legal framework was kept open to allow the introduction of new products, while limiting the risks related to security of deposits. Over time, technological innovations have also facilitated access to health insurance and other saving and lending products, from which low-income populations were previously excluded.

There is significant potential to replicate the Kenyan experience in the rest of sub-Saharan Africa. The developments in mobile money boost financial inclusion (Mbiti and Weil 2011), complementing traditional bank services (Figure 3.2.3; GSMA 2014). Out of 28 countries in sub-Saharan Africa for which information is available, in six countries holders of mobile accounts exceeded 20 percent of the adult population. Kenya leads the region with

[1] M-Shwari is a deposit-lending facility tailored to the poor, which gained 7 million customers over a year of operations. M-Kesho is a set of financial services available to customers of Safaricom, which does not have a minimum balance or monthly charges on accounts but pays interest on accounts and offers emergency credit and insurance.

Box 3.2. *(continued)*

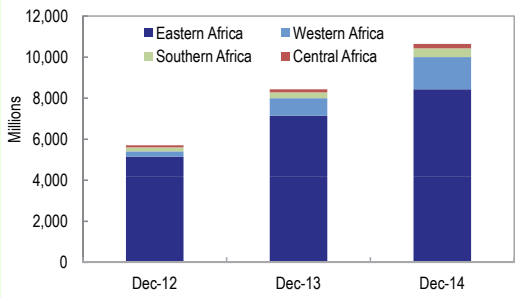
Figure 3.2.3 Mobile Accounts in Sub-Saharan Africa, 2014



Source: GSMA Mobile Money Programme.

almost 60 percent of the population holding such accounts. But mobile money transactions are also growing rapidly in Tanzania and Uganda, where such transactions doubled in the last three years in terms of broad money, reaching about 30 percent in mid-2015. In several African countries (Côte d'Ivoire, Kenya, Niger, Tanzania, Uganda, Zimbabwe), the number of mobile accounts has already exceeded the number of traditional bank accounts (World Bank 2014). However, access to mobile banking remains uneven in the rest of the region, with less than 5 percent of the population benefiting from it in several countries.[2]

Figure 3.2.4 Monthly Mobile Money Transactions



Source: GSMA Mobile Money Programme.

The size and variety of mobile financial products have expanded considerably. The number of banking transactions via mobile devices almost doubled in the region in the last two years (Figure 3.2.4). East Africa has led this trend, but mobile banking has also increased in other parts of Africa. In west Africa, mobile payments increased by a factor of six, although from a low base. Mobile money providers have broadened the range of financial products and services, as transaction accounts have served as a gateway to other financial services: utility bill and tax payments, savings vehicles, and credit and insurance products are gaining momentum in the mobile market in Côte d'Ivoire, Mauritius, Nigeria, Tanzania and Uganda. Products also target specific mobile users. For example, in Uganda, Orange Money has developed an application for farmers enabling them to buy farming supplies and receive payments for harvest. In Côte d'Ivoire, Orange, MTN, Moov, and Celpaid have developed an application that facilitates the payment of school registration (covering 1.5 million secondary school students). Increasingly, customers can also make international money transfers.

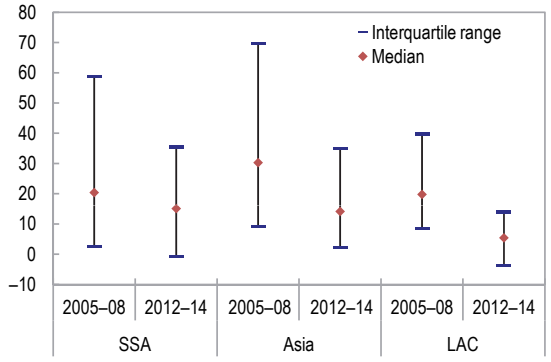
An enabling regulatory environment is essential for supporting the growth in mobile money services and financial inclusion (IMF 2012a; Klein and Mayer 2011). But there are also risks related to rapidly spreading mobile financial transactions, as they add to complexity and may give rise to abuse if conducted by unlicensed operators. Five key areas of risks need to be addressed by supervisors: legal framework, financial integrity, safeguarding funds, operational resiliency, and payment risks (Khiaonarong 2014). Supervisors should also monitor closely mobile money transaction values and ensure adequate protection of customer funds.

[2] A number of factors have been identified as potential impediments to the development of mobile financial services, including high costs of using electronic payments, especially for smaller transactions, a policy framework that requires intermediation via banks, and the lack of interoperability between providers.

Box 3.3. The Roles of Microfinance in Promoting Financial Inclusion

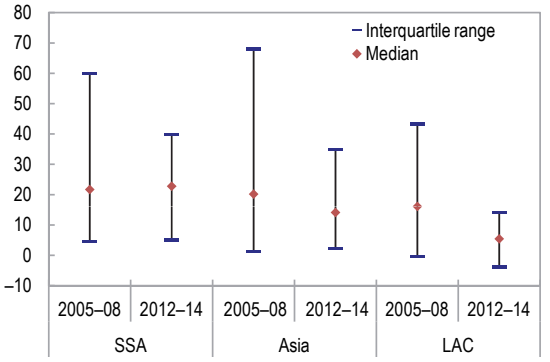
Microfinance has been growing rapidly in sub-Saharan Africa. Microfinance institutions (MFIs) typically provide small loans and saving services to the poor and near poor; some also provide micro-insurance and money transfer services. Following an average growth rate of about 20 percent a year in the number of borrowers and depositors since 2005, microfinance in the region now serves about 45 million clients in 2014 (Figures 3.3.1 and 3.3.2),[1] with the highest growth of MFI assets in east and southern Africa (Figure 3.3.3). In 2015–16, the region's microfinance market is projected to grow by 15–20 percent, second only to Asia, which can further support access to finance of the 350 million unbanked adults in the region (ResponsAbility 2014; Demirgüç-Kunt and others 2015).

Figure 3.3.1. Growth of Borrowers



Sources: MIX database; and IMF staff calculations.
Note: LAC = Latin America and the Caribbean; SSA = sub-Saharan Africa.

Figure 3.3.2. Growth of Depositors



Sources: MIX database; and IMF staff calculations.
Note: LAC = Latin America and the Caribbean; SSA = sub-Saharan Africa.

Microfinance has improved a variety of development indicators.[2] Overall microfinance activities remain small relative to those of banks, but their better reach to the poor with little or no collateral, including in rural areas, has significantly enhanced financial inclusion. MFIs also have had a positive impact on the poor, including through savings and credits (Ghana, Uganda), investment in microfirms (Kenya, Malawi), and income and consumption (Kenya, Madagascar, Malawi), although the evidence on its sustained poverty reduction impact is still mixed. MFIs also enhance gender equality as microcredits typically rely on women group guarantees to overcome the lack of collateral and missing financial market infrastructure. In 2014, about 60 percent of MFI borrowers were women in the region, almost twice women's share of formal bank accounts. But this ratio still lags behind that of the best-performing region of Asia and varies among the subregions, led by east Africa. Studies also find that microcredits by women have stronger positive impact.

Saving mobilization has outpaced credit services of MFIs. Over the past decade, growth in the number of depositors has exceeded that of borrowers. In 2013–14, depositors outnumbered borrowers four to one, while total volume of deposits also exceeded the gross loan portfolio in all subregions (Figure 3.3.3), reducing MFIs' funding needs from borrowing (less than 10 percent in the region). In contrast, numbers of borrowers and depositors are similar in other regions on average, and the volume of gross loan portfolios exceeds that of deposits. Moreover, borrowing in other regions is much higher—at about a quarter of total liabilities, with deposits accounting for one-half. Despite favorable financing costs, MFIs in sub-Saharan Africa encounter higher operational expenses (Figure 3.3.4), largely driven by the lack of physical and financial market infrastructure.

[1] Data are based on reports of microfinance institutions to the MIX database, and thus the incomplete coverage of such data indicates that they are more useful in analyzing the trend than the absolute level.

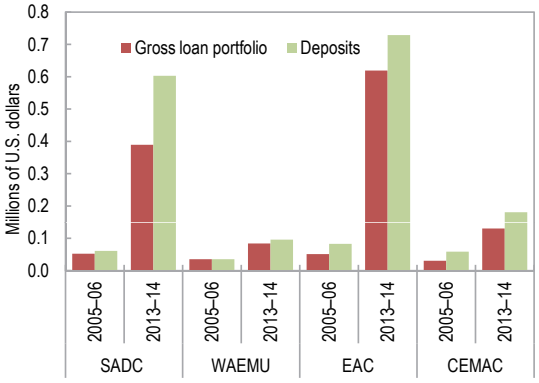
[2] For a detailed overview and results see, for example, Beck and Maimbo (2013), Cull, Ehrbeck, and Holle (2014), Roodman (2012), van Rooyen, Stewart, and De Wet (2012), and Demirgüç-Kunt and others (2015).

Box 3.3. *(continued)*

The declining portfolio quality of MFIs underscores emerging challenges. Despite charging higher interest rates (Figure 3.3.5), MFIs in sub-Saharan Africa produce a portfolio quality similar to the global average. Compared with other regions, sub-Saharan Africa records a higher loan loss rate, which has risen to about 5 percent in 2012–14, the highest of all regions. Although the share of loans at risk is largely at par with the global average, it has risen steadily (Figure 3.3.6). Despite the significant contribution to financial inclusion, MFIs are also subject to boom-bust cycles, and given that their clients are mostly the poor with less education, the sector is particularly vulnerable to natural disasters (for example, India, Nicaragua) and Ponzi schemes (Benin). Although the small size of MFIs generally limits the contingent fiscal risk, any significant shock can affect confidence, undermine financial deepening, and harm the poor the most. Therefore, strong actions are needed to address the risks in light of several recent crisis episodes.

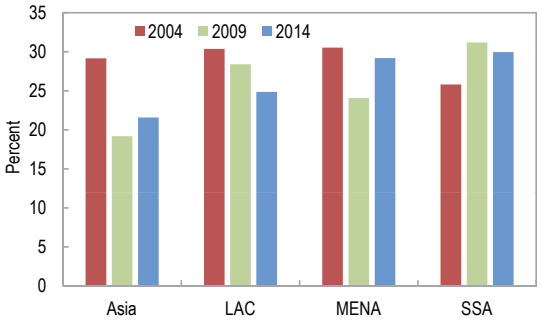
Improving financial literacy and financial market infrastructure are fundamental to strengthening MFIs. These measures help overcome critical information problems that impede access to finance. Also, they enhance the efficiency of microfinance and smooth the transition to bank finance as microfirms grow (CGAP and MIX 2011).

Figure 3.3.3. Microfinance Loans versus Deposits



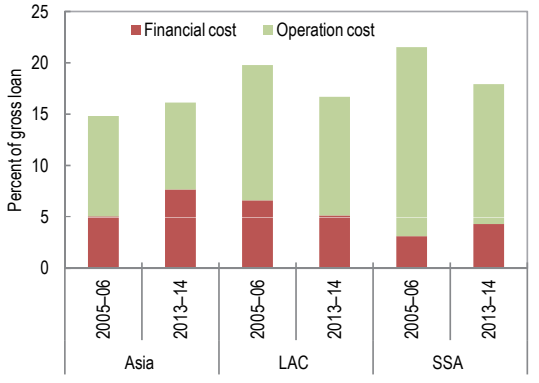
Sources: MIX database; and IMF, staff calculations.

Figure 3.3.5. Nominal Interest of MFIs



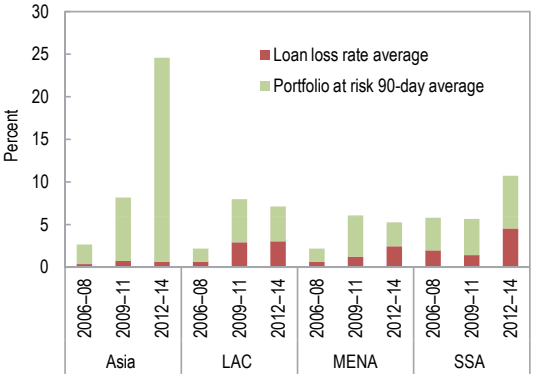
Sources: MIX database; and IMF staff calculations.

Figure 3.3.4. Financial versus Operational Cost



Sources: MIX database; and IMF staff calculations.

Figure 3.3.6. Portfolio Quality Indicators



Sources: MIX database; and IMF staff calculations.

Note: CEMAC = Economic and Monetary Community of Central Africa; EAC = East African community; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SADC = Southern African Development Community; SSA = sub-Saharan Africa; WAEMU = Western African Economic and Monetary Union.

Box 3.3. *(continued)*

Furthermore, these measures help to prevent the borrower overindebtedness that has contributed to repayment crisis episodes in some countries in Asia and Latin America. In particular, technological innovation and product diversification can inject further dynamism in microfinance and enhance its growth and poverty impact. Given its advantage in reducing operational costs by tapping into the fast-growing and high-penetration mobile network, mobile banking has become a fast-growing business for MFIs (Côte d'Ivoire, Kenya).

Strengthening supervision is key to addressing consumer protection and financial stability concerns while supporting financial inclusion. While the "test and learn" approach to supervision has supported rapid growth of the sector in many of the region's countries, enhancing risk-based supervision and enforcement is critical to weed out problem MFIs to support stability and efficiency (BIS 2010; CGAP and MIX 2011; Cui, Dieterich, and Maino 2016). Some countries made progress in regulating MFIs by activities (Democratic Republic of Congo, Kenya, Rwanda, Uganda, and the West African Economic and Monetary Union), but effective enforcement against small-sized, yet often more numerous, MFIs requires stronger commitment and commensurate resources by relevant supervisors. In addition to supervisor monitoring, strengthening professionalism in the microfinance sector is important to mitigate governance risk. Finally, the high share of MFIs that take deposits in the region also require effective collaboration between supervisors of nonbank financial institutions and bank supervisors.

Box 3.4. Measuring Financial Development and Inclusion

The financial development index (Sahay and others 2015b); Svirydzenka 2016) combines subindices on financial institutions and markets along the dimensions of financial depth, access, and efficiency.

Financial Institutions

Depth: Ratios of private sector credit to GDP, pension fund assets to GDP, mutual fund assets to GDP, life and non-life insurance premiums to GDP.

Access: Commercial bank branches per 100,000 adults, and ATMs per 100,000 adults.

Efficiency: Net interest margin, lending-deposit spread, non-interest income to total income, overhead costs to total assets, return on assets, and return on equity.

Financial markets

Depth: Ratios of stock market capitalization to GDP, stock market turnover to GDP, international government debt securities outstanding to GDP, and total debt securities outstanding of private nonfinancial corporations to GDP.

Access: Percent of stock market capitalization outside of top 10 largest companies, total number of debt security issuers (domestic and external, nonfinancial corporations, financial corporations).

Efficiency: Stock market turnover ratio (stock market turnover/capitalization).

The underlying series and subindices are combined in a linear manner, with weights being determined by principal component analysis. Financial depth has a relatively large weight in the financial institutions and markets subindices. However, for the overall index, financial markets and institutions enter with equal weights.