



# UNITED REPUBLIC OF TANZANIA

## SELECTED ISSUES—MACROFINANCIAL ISSUES

July 2016

This Selected Issues paper on Tanzania was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on June 30, 2016.

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# UNITED REPUBLIC OF TANZANIA

## SELECTED ISSUES—MACROFINANCIAL ISSUES

June 30, 2016

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## EXECUTIVE SUMMARY

**Tanzania's financial system, like those in most low-income countries, is dominated by banks.**

Financial markets, on the whole, are shallow and less developed though a few key markets (the interbank and foreign exchange markets) exhibit relatively greater liquidity and depth. Banks are generally well-capitalized and profitable. However, there is wide variation within the system: several mainly large banks have shown strong financial performance but other banks, primarily smaller foreign-owned banks and community banks, exhibit low profitability and poor asset quality. State-owned banks also have relatively high non-performing loan ratios. Where Tanzania stands out is in the sheer number of banks (57), which taken together with the poor performance of a number of these institutions, raises the question of whether some consolidation in the sector is warranted.

**The level of financial development in Tanzania has improved in recent years, though at a gradual pace.**

Using a broad measure of financial development, it appears that development of institutions has improved over time but development of markets has lagged. Among institutions, there has been notable improvement in financial access, particularly for households. The expansion of mobile money and banking is a key driver of this positive development. While nearly two-thirds of adults now have access to formal financial services, the picture for firms is less positive: in the 2013 World Bank enterprise survey, almost 44 percent of firms in Tanzania claim to face difficulties in accessing finance, the highest proportion in the East African Community, with small and medium enterprises facing particularly acute challenges. Further, the level of financial development in Tanzania is even lower than might be expected for a country at its current level of income and similar fundamentals, with market development particularly lagging.

**Improving financial development would like yield higher growth and greater stability.** Based on recent cross-country empirical work done at the IMF, Tanzania stands to benefit substantially from greater financial development. By bringing the level of development up to expected levels given Tanzania's economic and demographic characteristics, empirical estimates suggest that growth could be higher by up to 1 percent and less volatile.

**Relying only on credit expansion to achieve financial development and boost growth is unlikely to suffice.**

There has indeed been so far little relationship between economic growth and credit in Tanzania. Rapid credit growth, while likely a necessary ingredient of financial development, may also lead to potential vulnerabilities in the financial sector. In this context, the recent rapid rise in credit appears to be well-supported by economic conditions. The credit-to-GDP ratio, while rising, has not deviated from historical trends. Nevertheless, there are developments in some sectors that bear monitoring. In particular, lending to real estate, while small, has been growing rapidly. Further, some lending for property-related activities is not adequately captured by the data as it is classified as personal loans by commercial banks. While risks appear to be contained, regulators should step up their surveillance and improve data in this area. Beyond credit growth, financial development will require improving further access, particularly for businesses, and reducing high borrowing costs, which reflect a range of issues typically found in LICs (e.g., imperfect information and slow resolution of disputes by the judicial system).

**Mobile money transactions have grown rapidly in Tanzania, providing improved access to basic financial services, and its use is likely spurring efficiency gains and growth.** Mobile money transactions amounted to nearly 52 percent of GDP in 2015, up from just 0.2 percent in 2010. While it is difficult to conclusively prove that mobile money has strengthened growth, it is notable that several indicators point to a more effective financial and payments system since electronic payments platforms were introduced. Preliminary analysis suggests that the monetary expansion that is likely to occur with greater mobile money usage would reflect higher potential growth and would likely not lead to inflation.

**The recent improvements to the regulatory framework for electronic payments are welcome, but more work is needed.** The focus of policy should be to ensure the regulatory framework for mobile money maintains and enhances confidence in the system. In this regard, the newly enacted National Payments System Act, 2015 and associated regulations go a long way toward strengthening oversight, expanding the regulatory umbrella, and clarifying the roles of the regulators. Going forward, the BoT should continue to work on achieving full pass-through of deposit insurance coverage for individual mobile money accounts, addressing operational risks, and stepping up contingency planning.

**Improving financial market development in Tanzania would not only support growth but improve macroeconomic policy implementation.** The monetary transmission mechanism is weak and seems to have weakened, rather than strengthened, in recent years. There appears to be little correlation between short-term (market) rates and longer term retail rates, probably reflecting interest rate volatility in the interbank market. The lack of market development also adversely affects fiscal policy by reducing the authorities' capacity to raise domestic financing, run counter-cyclical policies in response to shocks, and raises risks such as rollover risks.

**A key first step to develop financial markets is for the BoT to further increase its emphasis on short-term interest rates.** By more directly focusing on stabilizing short-term rates, including through open market operations and implementing structural reforms, the BoT could strengthen the interest rate channel. To achieve this, forecasting and policy analysis capacity also needs to be further developed and integrated more systematically into the decision-making process. Communication also needs to be stepped up and improved, both through the regular publication of information and analyses and exchanges with market participants.

**Structural measures to improve market functioning are also needed.** Partial reserve averaging needs to be implemented as a matter of priority as it will help banks absorb unpredictable liquidity shocks and smooth excess reserves fluctuations. The BoT should adopt a more systematic and market-based approach to liquidity management aimed at influencing short-term liquidity to remain within a predefined range of excess reserves. Some features of the Lombard facility should be changed: The facility should always be available; T-bills and T-bonds of all maturities should be accepted as collateral; and the Lombard rate should be de-linked from contemporaneous market rates.

**Fiscal and debt management reforms would complement the reforms on the monetary side.**

Budget credibility needs to improve, and needs to be accompanied by better cash forecasting on the part of the fiscal authorities. This will also allow the authorities to announce and stick to a government securities issuance schedule, which ultimately would strengthen the government securities market. Tap sales should be phased out while transparent rules that govern the bidding process in primary auctions should be adopted. Arbitrary changes (changing or even cancelling offered amounts) should be eliminated. Greater communication with financial market participants would also help in setting the stage for a more effective government securities market.

## OVERVIEW OF THE FINANCIAL SECTOR IN TANZANIA

1. **The financial system in Tanzania is dominated by banks.** Financial system assets amounted to 43 percent of GDP in September 2015, with the banking sector accounting for 71 percent of the total. Other major parts of the system are the pensions funds (nearly 27 percent of total financial assets), insurance companies (just below 2 percent), and collective investment schemes (less than 1 percent).
2. **The foreign exchange and interbank markets are the most active financial markets in Tanzania.** Tanzania has a number of key markets in place, including an interbank market, foreign exchange market, government bond market, and a stock exchange that lists shares as well as both government and corporate bonds. However, the different markets exhibit different levels of depth and liquidity. The foreign exchange and interbank markets are the most developed, with relatively active trading by commercial banks in them.<sup>1</sup>
3. **Activity in the government bond market is mainly on primary auctions with little secondary trading.** Banks and other investors participate in auctions and have predominantly focused on the shorter maturity Treasury bills (T-bills), which have original maturities of between 35 and 364 days. T-bills are issued by the government for short-term funding, and by the Bank of Tanzania (BoT) for liquidity management. Treasury bonds (T-bonds), which have original maturities of between 2 and 15 years, form a smaller subset of government papers. While investors from East African Community (EAC) countries may participate in this market (subject to restrictions), there has been little activity thus far. The BoT is reviewing the prudential rules in place with a view to addressing speed bumps that may be preventing greater foreign participation and also to extend the liberalization to all foreign investors. Currently, there is some TSh 4.5 trillion or 5 percent of GDP in T-bonds outstanding.

<sup>1</sup> Some commercial banks are reported to have withdrawn from the interbank foreign exchange market in response to a tightening in the regulatory oversight of transactions to avoid the reputational risks of being penalized.

**4. The stock exchange has grown rapidly in recent years.** The bourse, which lists 23 equity counters and has a market capitalization of about 24 percent of GDP, owes its recent growth to a growing willingness of companies to list on the exchange, and liberalization of foreign exchange regulations that allow foreign investors full access to the bourse. Corporate and government bonds are also listed on the exchange but there is little secondary trading of these papers.

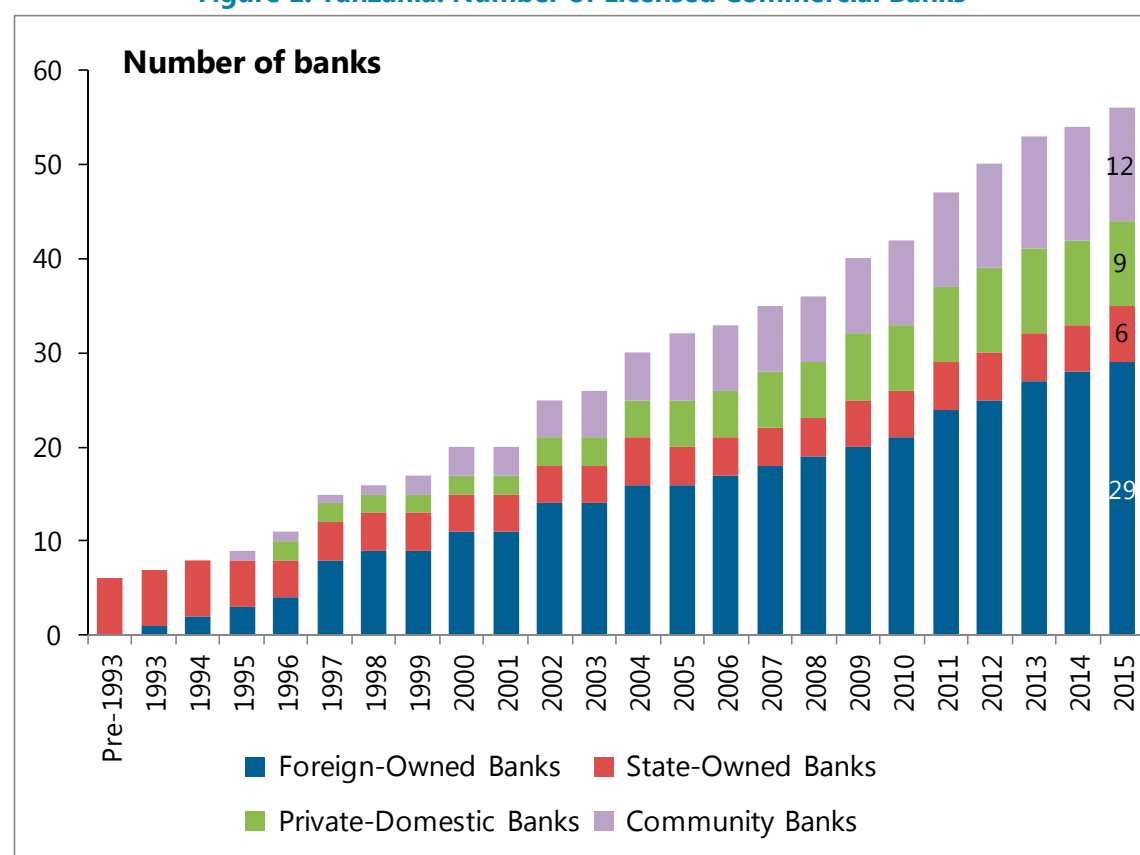
**5. The Tanzanian financial system has a number of characteristics commonly seen in other low income countries (LICs).** The system is relatively small, dominated by banks, and has not been particularly inclusive. Access to financial services remains clustered in urban areas as the lack of infrastructure (power, telecommunications, roads) and the high cost of “bricks and mortar” branches have stymied the expansion of networks into rural areas, which is where the bulk of the population lives. Nevertheless, through innovative platforms, especially mobile money and agency banking, there has been a rapid improvement in households’ access to finance in recent years with nearly two-thirds of adults now reporting some access to the formal financial system. Costs related to basic financial services (transfers, withdrawals, deposits) have also come down. However, in other areas, progress remains limited: firms’ access to credit remains a problem, access to the financial infrastructure continues to lag, and market development remains at a low level.

**6. The focus of the remainder of this section is primarily on banks, given their importance, and mobile money, given its recent fast development.**

## **A. The Banking Sector**

**7. The banking sector in Tanzania has gone through many changes over the last five decades.** Following the nationalization of all commercial banks, during the 1970s and 1980s, the banking sector was dominated by public-owned banks: National Bank of Commerce (NBC), Cooperative Rural Development Bank (CRDB), Tanzania Investment bank, Tanzania Housing Bank and Tanzania Postal Bank. The financial sector struggled: directed lending by state-owned banks to loss-making public enterprises resulted in chronic non-performing loans. The introduction of market-based reforms in the mid-1990s led to the privatization of NBC and CRDB and opened up the banking sector to privately-owned domestic and foreign banks. During the following two decades, the liberal licensing practice of the BoT has led to a gradual increase in the number of banks.

**8. Tanzania today has 57 licensed banks, more than in other East African countries.** The largest number of banks is majority foreign-owned (Figure 1). This includes several international banks, pan-African banks, and a number of regional banks. One of the foreign-owned banks (FBME Bank) has been predominantly operating as an offshore bank through a branch in Cyprus, and was recently identified as source of money laundering risk by the U.S. authorities. The domestically owned banks are dominated by several formerly state-owned banks that were privatized in mid-1990s. There has also been an expansion of community-based banks. The government maintains ownership of a number of banks, including an investment-oriented bank.

**Figure 1. Tanzania. Number of Licensed Commercial Banks**

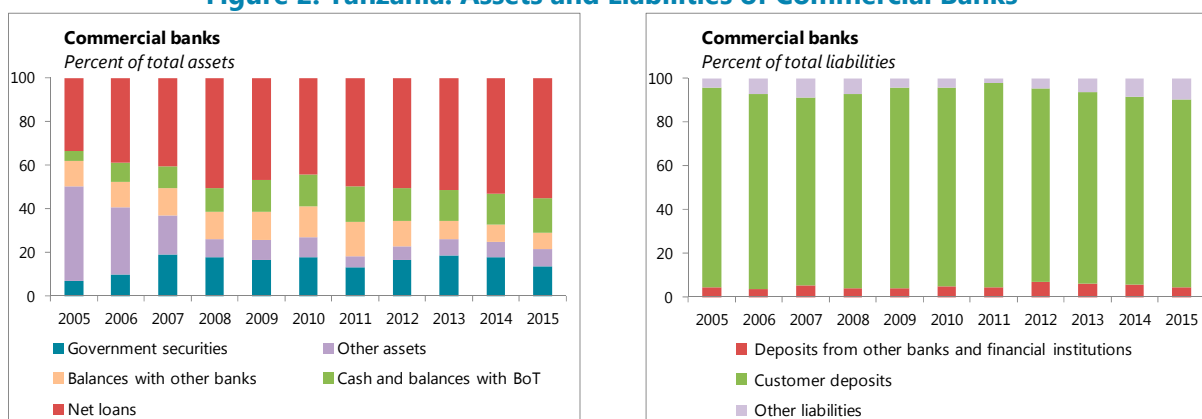
Source: Bank of Tanzania

**9. The data used for the subsequent analysis is for 55 banks<sup>2</sup> in Tanzania, and are drawn from their published financial statements.** This facilitates a more granular exploration of bank sector stability in Tanzania supplementing the quarterly financial stability indicators published by the BoT for the aggregate banking system. All averages reported for groupings of banks are weighted across the respective group. Recent developments in the banking sector are set out in the Annex 1 and Appendix Table A1 lists all the banks classified by the four main categories together with information on assets, capital, date of bank license and ownership composition.

**10. Commercial banks primarily extend loans and fund their activities through customer deposits.** However, in recent years, other liabilities have increased, suggesting greater use of leverage to fund activities. Holdings of government securities in relative terms have also declined over the last decade (Figure 2).

<sup>2</sup> Excludes FBME Bank, which is operating under close supervision of the BoT following action initiated by the U.S. authorities, and the Tanzania Agricultural Development Bank (TADB), which has yet to start operations.



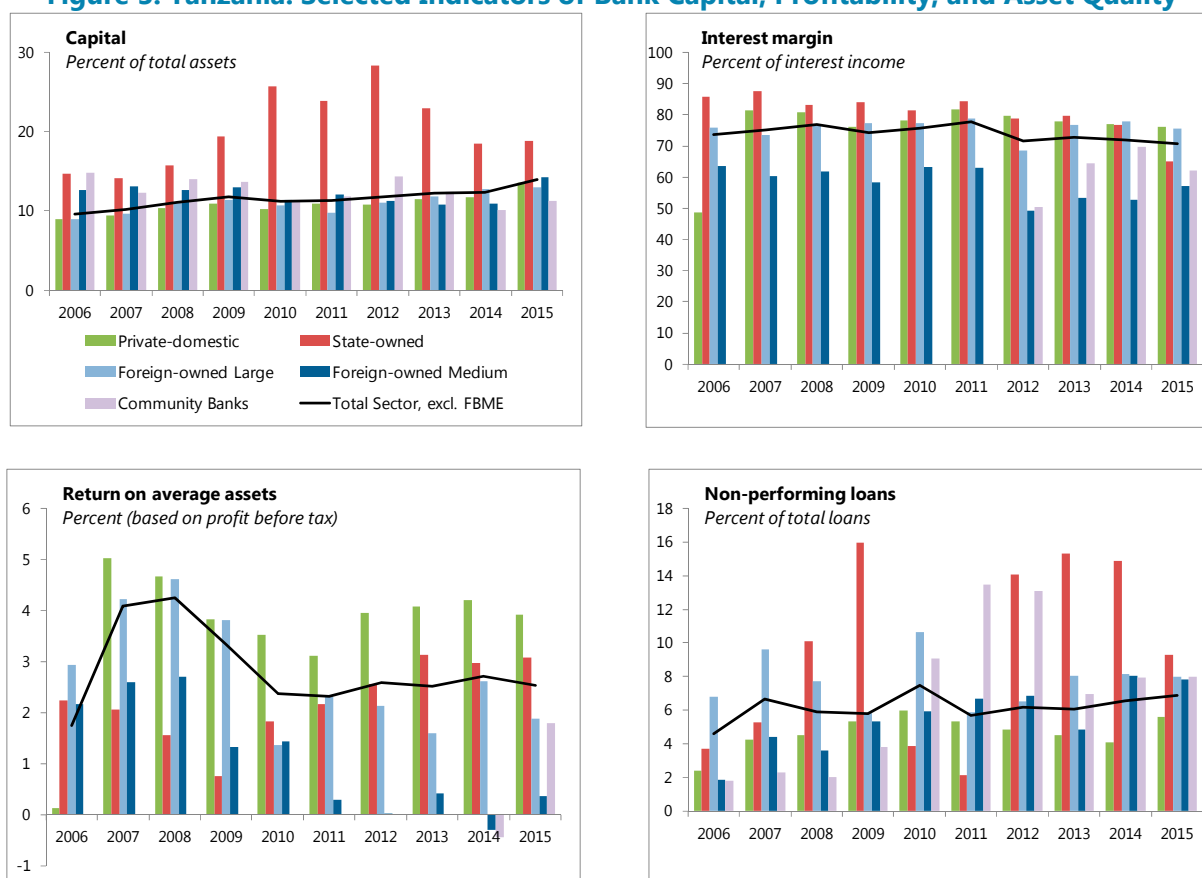
**Figure 2. Tanzania: Assets and Liabilities of Commercial Banks**

Source: Bank of Tanzania

**11. The system overall is well-capitalized and reasonably profitable but there is considerable variation among bank categories.** The BoT has raised capital requirements over time, and the vast majority of banks have complied with the higher standards. However, some banks have moved more slowly to meet the new standards. Community banks—small institutions set up typically to serve specific regions—are not subject to the same capital requirements as other banks but the BoT is working to develop an appropriate framework for them. Interest margins remained stable, with private domestic banks (the largest group by asset size) showing significant improvement over the last decade, which has driven the improvement in return on assets for this group. In terms of quality of assets, the non-performing loans ratio has risen in recent years but remains relatively low. For some groups such as state-owned banks and community banks, the ratio is elevated, while foreign-owned banks continue to have higher-than-average NPLs (Figure 3).

**12. Nonetheless, a more granular balance sheet analysis points to some vulnerabilities and potential risks.**

- The number of banks in Tanzania is high in spite of the still relatively small size of the banking system. This raises the issue of whether it affects the profitability of some banks, and whether some consolidation would be beneficial in terms of both financial stability and profitability. Disaggregated data seem to confirm this: the larger banks are in a relatively healthy position while smaller banks appear to face challenges. Moving forward with the planned increase in capital requirements may support a gradual consolidation amongst banks.

**Figure 3. Tanzania: Selected Indicators of Bank Capital, Profitability, and Asset Quality**

Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB, and operations in subsidiaries abroad by CRDB and EXIM Bank.

- Also, the more liberal licensing policy does not seem to have resulted in a significant decrease in interest margins and in the cost of borrowing.<sup>3</sup> This suggests that there are structural factors increasing the risk of lending in Tanzania (e.g., limitations on available collateral including land, information asymmetries, uncertainties regarding legal protections of creditor claims, etc.) that need to be addressed.
- Some banks continue to have high levels of NPLs. At least 22 banks had NPL ratios above the indicative ceiling<sup>4</sup> of five percent set by the BoT. This includes several state-owned banks. In a number of domestic and foreign banks, the NPL ratios (while still relatively low) have been creeping up. There is a risk that the more recent expansion of loans will lead to a further uptick in NPLs. To partially counter this, a more proactive approach is needed by the BoT in their supervisory role to work with commercial banks on reducing NPLs.
- Some state-owned banks have expanded their loan portfolio without comparable increases in their deposit base and instead relying on short term borrowing (most noticeably TIB). Given their business model, there may be a need to ensure a more stable funding base (whether by deposits or long term loans, e.g., from development agencies).
- Two smaller entities report negative capital, though the available balance sheet data for these institutions raises concerns as to how reliable these estimates are. Notwithstanding potential data issues, this raises the question whether these banks can still be regarded as viable entities or whether they de facto are insolvent. The overall stability of the banking system would be enhanced by the BoT tackling these banks more forcefully.

## B. Evolution of Mobile Money and Banking in Tanzania

**13. In East Africa, mobile money platforms are seen as a gateway to access to formal financial services.** Mobile money and banking are distinct. Aron (2015) notes that mobile banking has a formal regulatory definition, namely, the capacity of an account holder or client to access their bank accounts and financial services through mobile devices. However, mobile money is different: it does not appear to have formal regulatory definition. In most cases, it refers to the capacity to transfer or receive some sort of unit of account ("credits") between mobile devices so as to make

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<sup>3</sup> According to banks, the proliferation of banks, coupled with a concentration of liquidity, may have also increased competition for deposits from large customers, especially pension funds, particularly among medium-sized banks. This has led to higher deposit rates for these funds, which in turn has kept lending rates high.

<sup>4</sup> The BoT has a medium term goal of the system-wide NPL ratio to below 5 percent. While not an explicit part of the regulations, banks with ratios higher than the indicative ceiling are required to outline strategies to achieve this goal, and need to regularly report on progress toward this goal. The BoT has not ruled out stronger action but thus far, has left it to individual banks to implement their announced plans.

payments for purchases of goods or services, or in the payment of obligations.<sup>5</sup> Mobile money can be transformed into cash and vice versa, as in Tanzania and other countries in East Africa, while in other countries, its use as a payments platform is limited within a specific ecosystem. Further, while mobile banking is an extension of banking services and therefore linked to a formal financial institution, mobile money can be provided by a mobile network operator (MNO), a bank, or some combination of the two.<sup>6</sup>

**14. The significant expansion of mobile money in Tanzania is underpinning the improvement in access to financial services.** The nominal value of mobile money transactions, and their importance relative to broader monetary and economic aggregates, has risen exponentially since the end of 2010. Monthly transactions, which stood at around TSh 452 billion in July 2011, have exceeded TSh 4.7 trillion in December 2015. On an annual basis, total mobile money transactions amounted to nearly 52 percent of GDP in 2015, up from just 0.2 percent in 2010. Mobile money has also had a major impact on financial access. This has initially been by providing access for previously excluded segments of the population to a convenient and safe mechanism for making transfers and payments. Since end-2011, the growth in users has continued steadily with the BoT reporting total users at end-2015 amounting to 53.8 million, of which 19 million (35 percent) are classified as active customers.<sup>7</sup>

**15. Mobile money may act as a gateway to more sophisticated financial products and services.** More recently, new savings and loans products being introduced add additional benefits from financial inclusion. Indeed, it is noteworthy that transactions, which had appeared to be plateauing around TSh 3 trillion toward the end of 2013, grew again in 2014 following the introduction by Vodacom of a new mobile savings and lending product (M-Pawa). This suggests that linking banking services with mobile money has the potential to generate positive feedback loops for both platforms. Mbiti and Weil (2011) also found that in Kenya, the use of mobile money increases the probability that users will become banked.

**16. Notwithstanding the growth in customers and transactions, the value of mobile money stocks relative to economic variables is low.** Mobile money deposits enter the formal financial system through the use of trust accounts set up by the MNOs with banks (see next section). Therefore, it is possible to measure the balances outstanding in mobile money accounts relative to

<sup>5</sup> Adam and Walker (2015), however, use the catchall term “mobile money” to cover all financial services offered by mobile network operators. To a large extent, the distinction is important for the topic under discussion: when examining macroeconomic implications of the services, authors tend to conflate the two, but when the discussion turns to inclusion, risks or regulation, separating the two can be helpful.

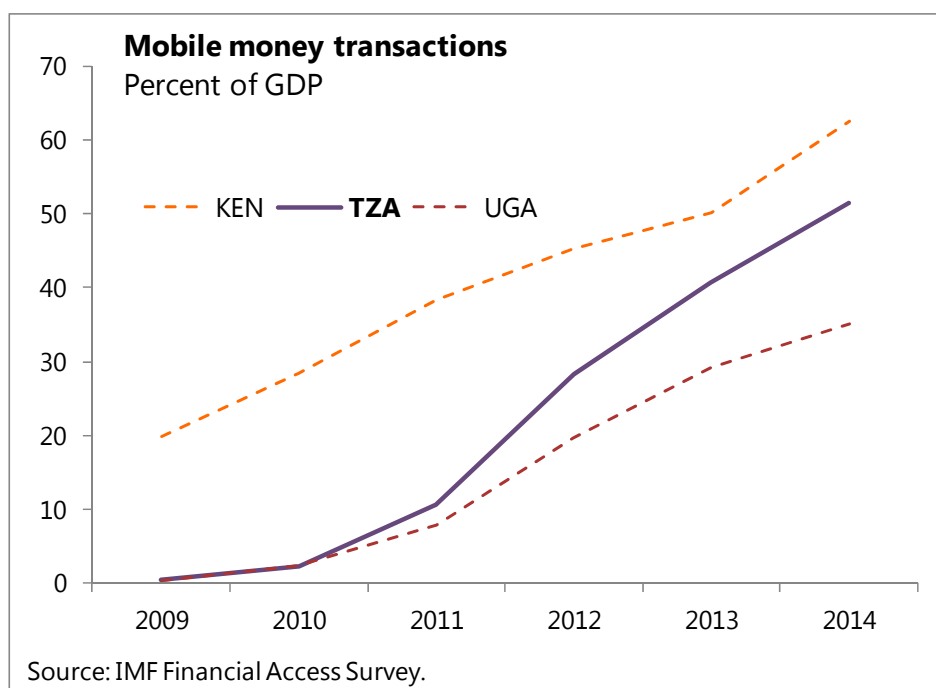
<sup>6</sup> In Tanzania, mobile money services are provided by four MNOs, while a number of banks offer interfaces between the mobile money platform and bank accounts. One large bank is planning to launch its own mobile money platform, using similar technology as Equity Bank has used in Kenya.

<sup>7</sup> There are questions about the reliability of the data collected by the BoT on the number of registered users. As of end-2015, the Tanzania Communication Regulatory Authority reported total SIM-cards amounting to 38.6 million and 17.6 million mobile money accounts, less than the total amount of users reported by the BoT.

broad economic variables such as GDP and monetary aggregates. While transactions have reached significant proportions, the balances on the trust accounts remain relatively low: at the end of 2011, balances in trust accounts amounted to a scant 0.18 percent of GDP, and have increased gradually to 0.6 percent at end-2015. This suggests that users keep low mobile money balances, which are then primarily used for transactions. Funds in the trust accounts amount to 8.5 percent of reserve money at the end of 2015, in contrast to the 53.8 percent accounted for by currency in circulation. The financial system in Tanzania remains very much cash-driven.

**17. Multiple providers compete to provide services in Tanzania.** Four companies provide mobile money services in Tanzania: Vodacom; AirTel; Tigo; and ZanTel, with a fifth, Halotel, currently in the process of obtaining a license to operate such services. The Tanzanian experience is in stark contrast to that of Kenya, which until recently has been dominated by one provider (M-Pesa, provided by Safaricom, a subsidiary of Vodacom). Tanzania's take up of mobile money and banking services does not lag much behind that in Kenya (Figure 4).

**Figure 4. Tanzania: Mobile Money Transactions in Kenya, Tanzania and Uganda**



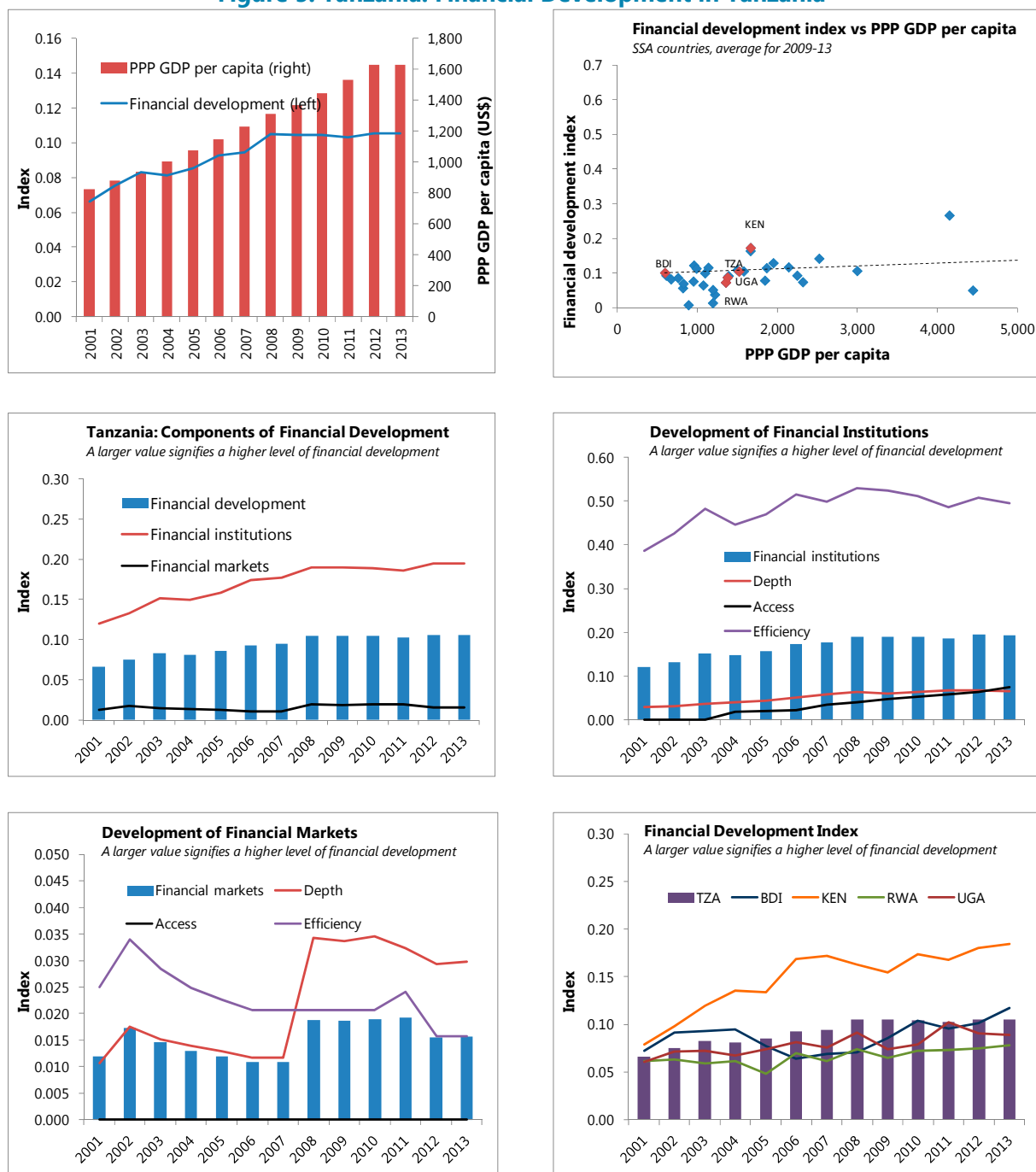
## BENCHMARKING FINANCIAL SECTOR DEVELOPMENT

**18. Financial development in Tanzania has improved, with notable gains in financial access over the last decade (Figure 5).** Like in many LICs, Tanzania's financial sector remains relatively less developed on most key indicators. But in the last decade, financial development has seen notable improvement. The observed improvement has primarily been concentrated in the development of financial institutions, with markets lagging.<sup>8</sup> In recent years, and in common with the experience in a number of countries in the East African Community (EAC), development appears to have leveled off. In Tanzania, this has been due to the improvement in the financial institutions sub-index slowing markedly, given that progress on market development continues to remain limited.

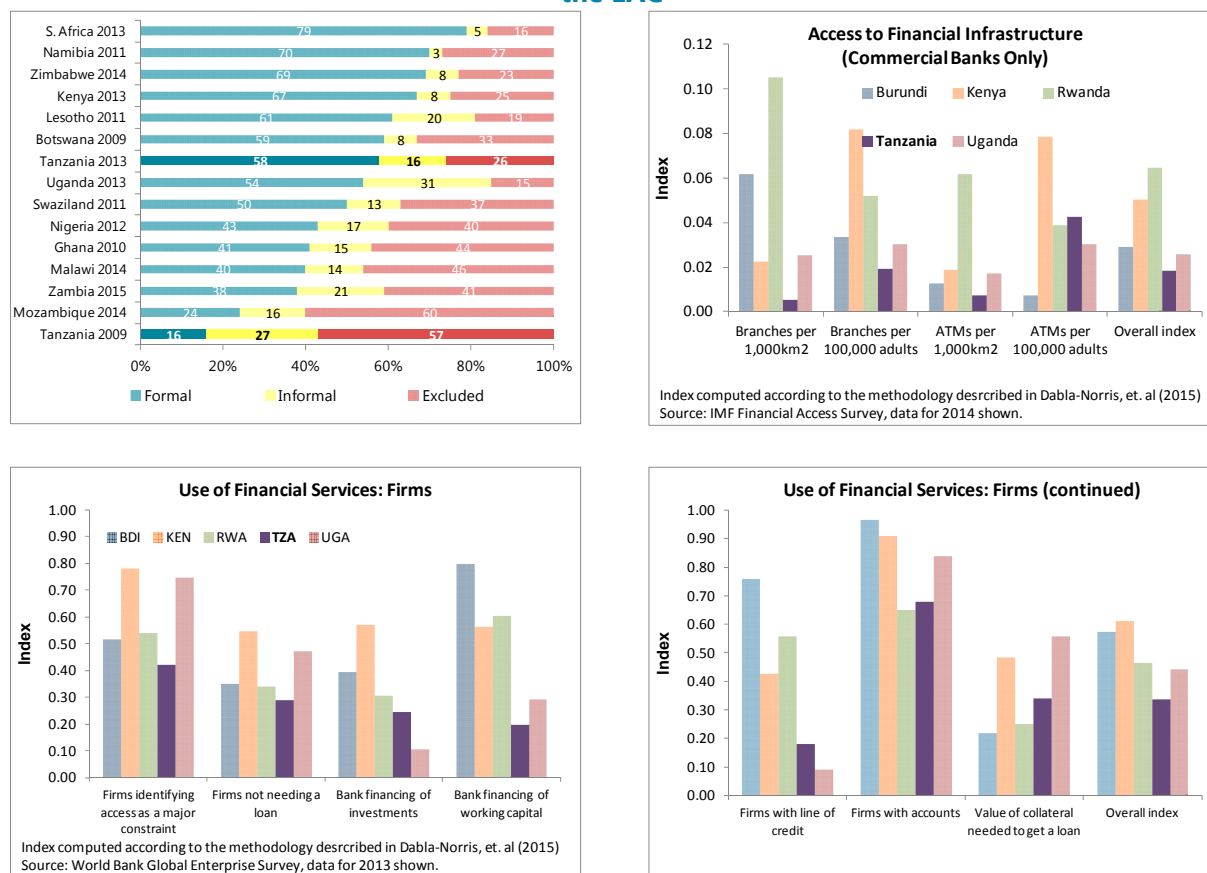
**19. The development in financial institutions is primarily driven by a rapid improvement in access.** In particular, indicators of financial access for households show significant progress, particularly when innovations such as mobile money and banking are taken into account. For instance, the World Bank's Global Financial Inclusion (Global FinDex) database suggests that while only about 19 percent of adults in 2014 have a bank account at a formal financial institution (up from 17.3 percent in the 2011 survey), the proportion doubles to 39.8 percent when mobile accounts are included. The most recent FinScope survey for Tanzania shows similar trends: the 42-percentage point increase in formal financial inclusion between the 2009 and 2013 surveys is driven almost entirely by the rapid expansion in mobile money and banking services (Figure 6). However, the picture is not uniformly good. Tanzania ranks at the bottom among EAC countries for measures of firms' access to credit and other financial services. In the 2013 Global Enterprise Survey, almost 44 percent of firms identified access to finance as a major constraint, the highest proportion in the EAC.<sup>9</sup> Access to financial infrastructure is another weak point: branch penetration is particularly poor.

<sup>8</sup> Financial development is measured by an index developed by Sahay and others (2015), which combines 21 indicators to assess 3 dimensions—depth, access and efficiency—for both financial institutions and markets. Financial institutions include not just banks but also insurance companies, mutual funds, pension funds, and other types of nonbank financial institutions. Financial markets refer to exchanges where financial assets may be traded, and include mainly stock and bond markets. Indicators include private sector credit-to-GDP, commercial bank branch penetration, ATM penetration, net interest margins, lending-deposit spreads, overhead costs, return on assets and equity of banks, size of the insurance and mutual funds sectors, stock market capitalization and turnover, private debt securities outstanding, and international debt securities issued by the government. Individual indicators are converted to normalized indices, which are then combined into sub-indices and a final index. Weights for each indicator are derived from a principal component analysis of the underlying series such that a series that contributes more to the direction of a common variation in the data is given a higher weight.

<sup>9</sup> Based on latest available data. For Kenya, Tanzania and Uganda, the latest survey was conducted in 2013; for Burundi, 2014; and Rwanda, 2011.

**Figure 5. Tanzania: Financial Development in Tanzania**

Source: Sahay and others (2015), staff's calculations.

**Figure 6. Tanzania: Indicators of Access to Financial Services and Financial Infrastructure in the EAC**

Sources: FinScope, IMF Financial Access Survey, World Bank Global Enterprise Survey, staff's calculations.

For the charts derived from the IMF Financial Access Survey and the World Bank Global Enterprise Survey (top right and bottom row), indicators were converted into indices such that a larger value (closer to 1) indicates better performance. In particular, a lower score for the index values for negative indicators such as firms identifying access as a major constraint (chart in the lower left in the panel) means a larger proportion of firms in that country identify this as a problem. The composite indices were constructed as a simple average of the index values of the indicators. For the indices for access to financial infrastructure (bottom row), the sample was winsorized to exclude outliers (values exceeding the 95th percentile and below the 5th percentile), and the indices were then computed using the truncated values. To ensure comparability, only data for commercial banks was used; financial services provided by other financial firms such as savings and credit cooperatives, for which data are not universally available, were not included. The inclusion of data from a broader range of institutions does not change the conclusions of the analysis.



**20. Tanzanian institutions have shown little improvement on measures of efficiency in recent years.**

On a number of efficiency measures, Tanzanian banks are in line with regional peers. Overall costs as a proportion of income rose gradually after 2007 but since 2012, they have stabilized. Further, the cost level is consistent with regional peers as well as the expected level for a country with similar characteristics as Tanzania (Figure 7). However, overhead costs as a proportion of total assets have continued to rise and exceed the expected levels. This may explain why, when the Tanzanian banking system is less concentrated than either those of its regional peers and relative to its expected levels, the apparent benefits of competition (for instance, measured by the net interest margin) are not accruing to customers. The explanation for the higher cost structure may in turn be partly the result of how the more liberal licensing policy in Tanzania played out. While there was a significant increase in entry—particularly of foreign banks—after 2008, the bulk of the new entrants were mid-tier banks that faced relatively high fixed costs but not the efficiencies of scale needed to defray those expenses.<sup>10</sup>

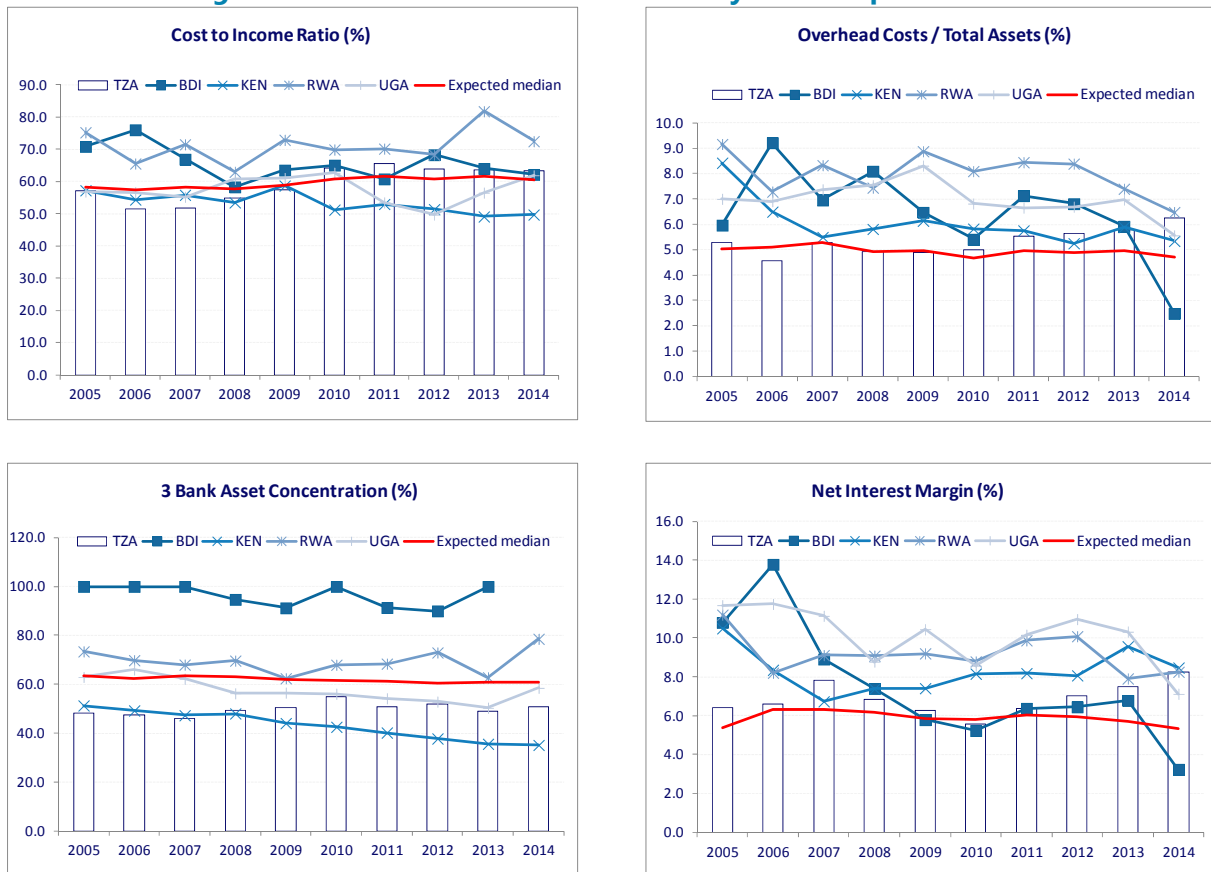
**21. Low access and lack of efficiency gains likely led to the lack of improvement in financial depth**

(Figure 8). While the broad measures of depth are at about their expected median levels (and above most of the other EAC countries), it is noteworthy that the credit-to-GDP ratio has not moved significantly in recent years, and the bank deposits-to-GDP ratio has declined. The developments in the deposits-to-GDP ratio are potentially a concern, as they suggest some impairment of the capacity of the financial sector to mobilize and consolidate domestic savings, and channel them into productive investments. More recent data show a pick-up in the growth of deposits, which may suggest the downturn is a temporary phenomenon. Nevertheless, this recovery needs to be sustained to ensure the financial system as a whole is able to support growth and economic development.

**22. Development of the non-bank financial sector lags significantly** (Figure 9). Capital market development remains particularly low: while there are more companies listed on the Dar es Salaam stock exchange than in Uganda, total market capitalization is lower. Nevertheless, the stock market is becoming increasingly vibrant, especially since foreign investors were permitted to participate with no restriction in the market. Similarly, the insurance and fund management sectors are small, though the former has seen significant expansion since 2011. The introduction of new players, including newly-allowed foreign investors in the government securities market under Tanzania's recently liberalized capital account has the potential to add to market depth and functioning but thus far, actual participation remains low in this segment.

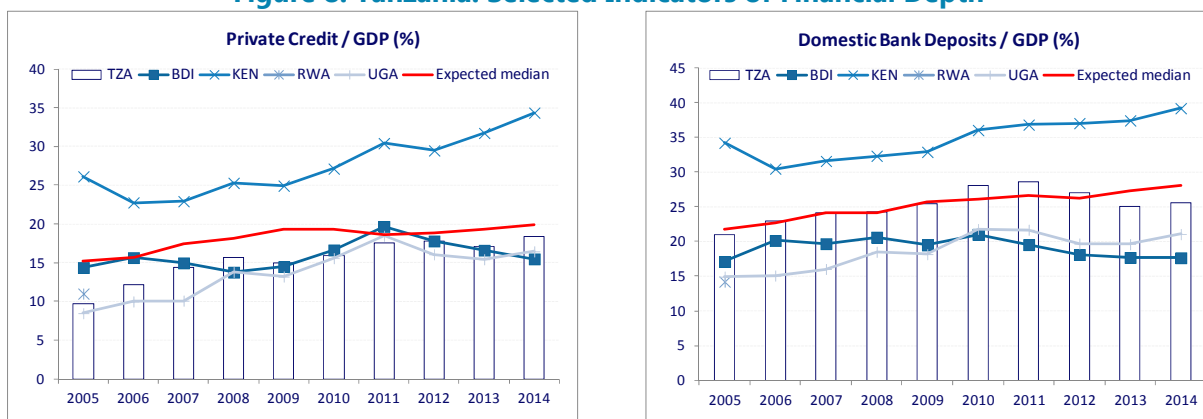
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<sup>10</sup> 2013 Financial Sector Assessment Program for the East African Community, World Bank.

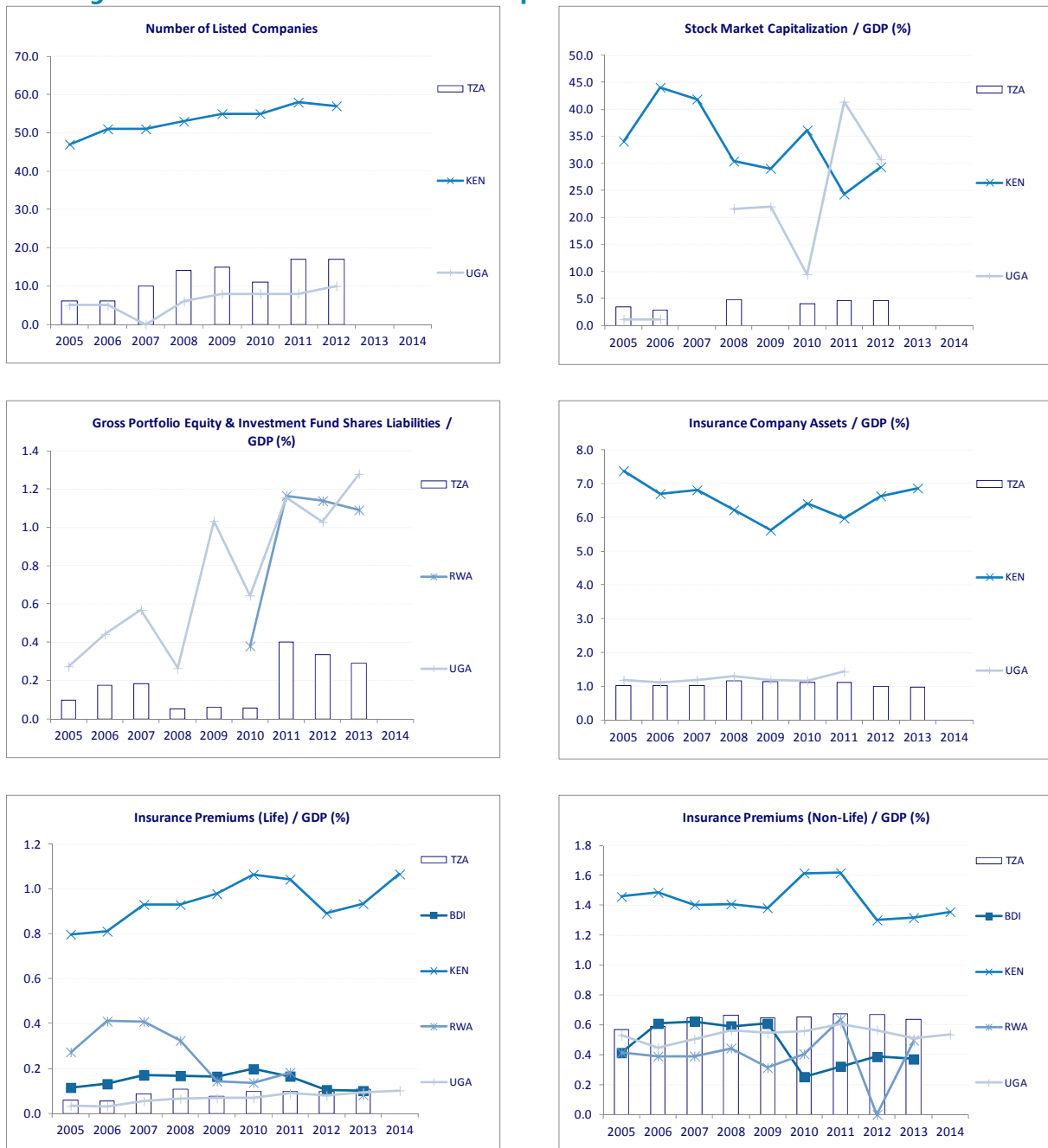
**Figure 7. Tanzania: Indicators of Efficiency and Competitiveness**

Source: FinStats database, World Bank.

The database also includes a median value for each indicator by country, based a sample of peer countries with similar economic and demographic characteristics

**Figure 8. Tanzania: Selected Indicators of Financial Depth**

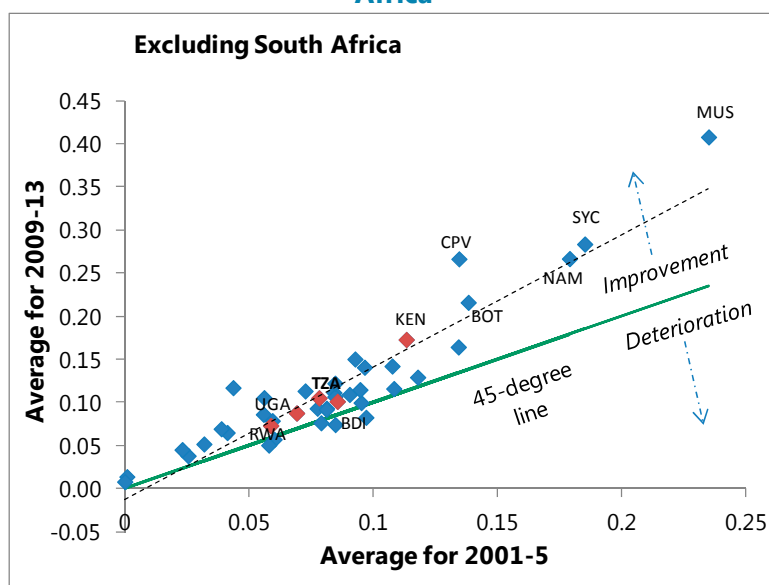
Source: FinStats database, World Bank.

**Figure 9. Tanzania: Indicators of Development of the Non-Bank Financial Sector**

Source: FinStats database, World Bank

**23. The improvement in financial sector development in Tanzania is in line with the experience of other countries in sub-Saharan Africa (SSA).** Using the financial development index suggested by Sahay and others (2015), we can see that Tanzania (and most SSA countries) has experienced an improvement in the level of financial development over the last 15 years. More importantly, the improvement in Tanzania appears to be fairly typical and in line with its regional peers.

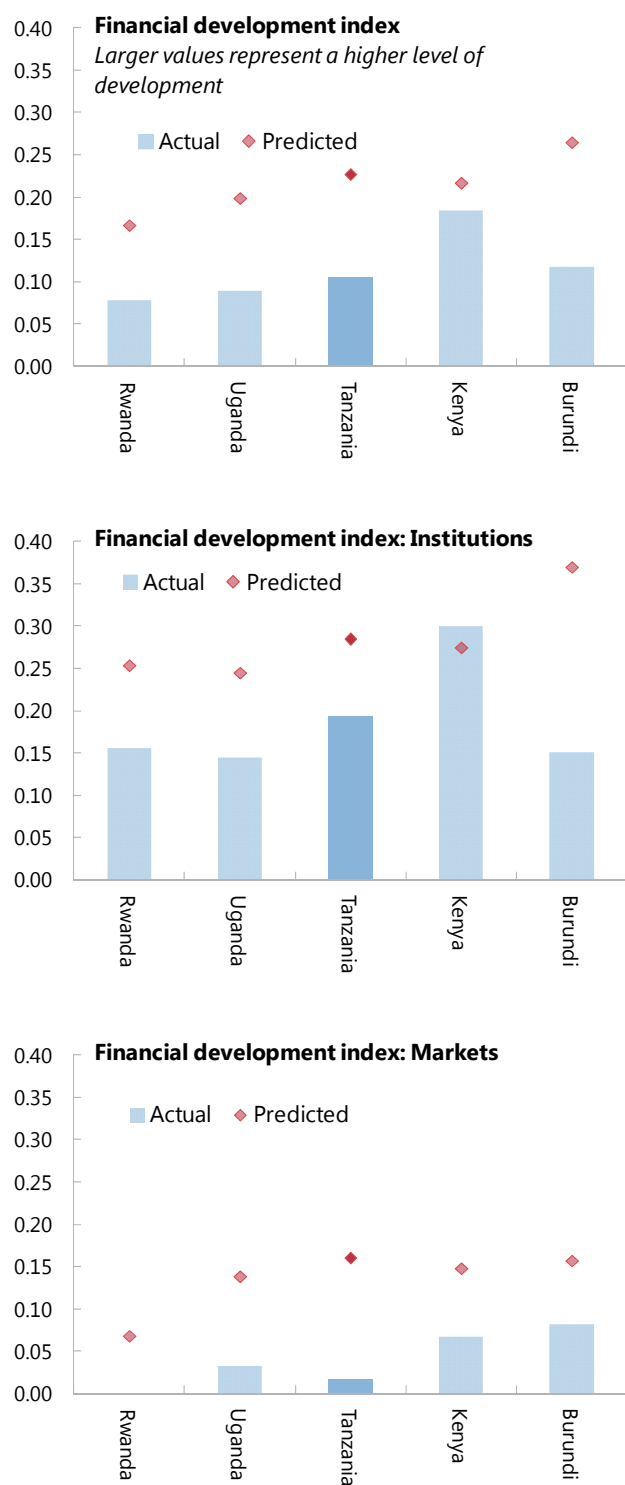
**Figure 10. Tanzania: Financial Development in Sub-Saharan Africa**



Source: Sahay and others (2015), staff calculations.

**24. Notwithstanding the comparability of the observed improvement with regional peers, the level of financial development is below what might be expected given fundamentals.** As already noted, there appears to be a gap between the expected and observed level of financial development for a number of indicators. Recent work undertaken by IMF staff attempts to predict the expected level of financial development based on key economic and demographic characteristics, such as per capita income, population size and density, the age dependency ratio and country characteristics (IMF, 2016). Indeed, Tanzania exhibits the largest gap between its actual and predicted level of financial development in the EAC (Figure 11). While there is a gap relative to the expected levels of development for both institutions and markets, it is the latter where the difference is particularly stark.

**Figure 11. Tanzania: Actual and Predicted Levels of Financial Development**



Source: Sahay and others (2015); IMF (2016)

## FINANCIAL DEVELOPMENT AND INCLUSION: IMPLICATIONS FOR GROWTH, STABILITY, AND THE EFFICIENCY OF MACROECONOMIC POLICIES

### A. Financial Development and Long-term Growth

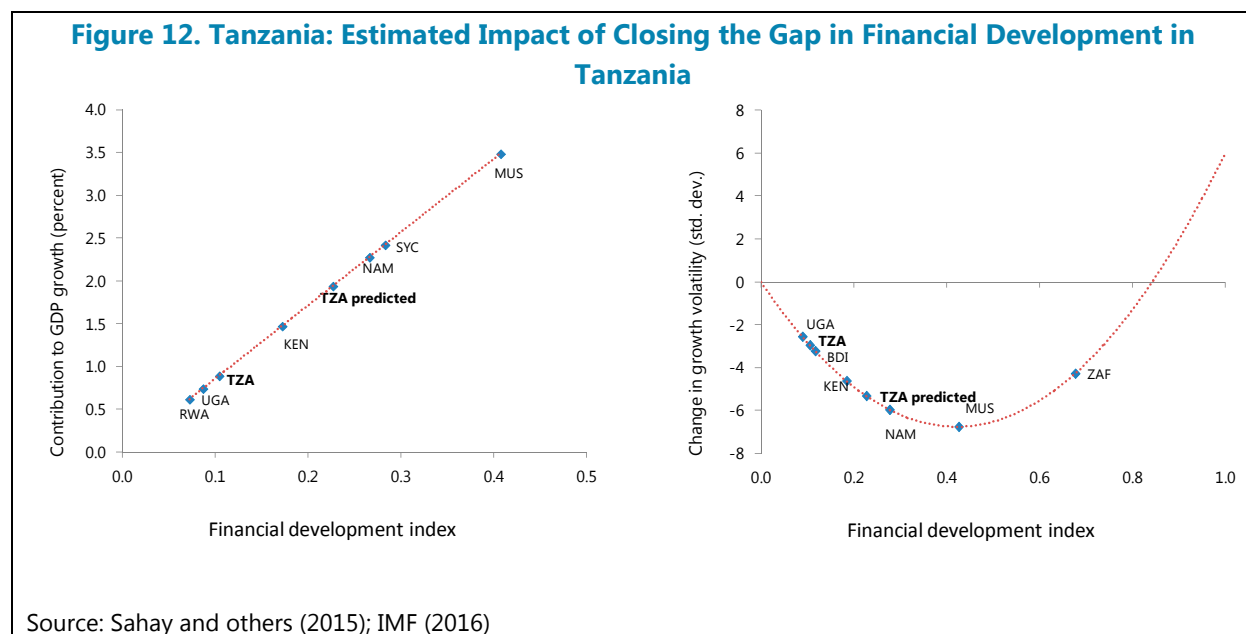
**25. Financial sector development in Tanzania could bolster growth while increasing resilience.** A well-developed financial system does this by mobilizing savings to fund investment and growth, promoting better sharing of information, improving the allocation of resources, and facilitating risk management. In addition, the infrastructure that goes along with financial development such as modern and efficient payment systems promote efficiency even in the absence of credit. Recent empirical work confirms the relationship between growth and stability on the one hand and financial development on the other, up to a point. For instance, a number of authors suggest that countries with under-developed financial systems appear to be able to simultaneously enhance economic growth and improve resilience by enhancing financial development across a number of dimensions (Sahay and others, 2015).

**26. Bringing the level of financial development to predicted levels could significantly strengthen growth prospects and improve macro-stability.** For emerging market economies and less developed countries, Sahay and others (2015) find evidence that a more developed financial system (proxied by a higher value of their financial development index) results in higher real GDP growth per capita. This relationship appears to be a non-linear one: at some optimal level, the financial sector may become a drag on growth.<sup>11</sup> The exact optimum for each country depends on a number of factors, including the quality of institutions, particularly those related to financial regulation and supervision: stronger institutions would allow countries to derive greater benefits. However, we can aim to quantify these gains in a less ambitious way by assessing the impact of closing the gap between actual and predicted levels of financial development discussed in the last section. Closing this gap in Tanzania could boost real per capita GDP growth by up to an additional 1 percent while reducing growth volatility (proxied by the standard deviation of GDP growth).<sup>12</sup> This empirical association between financial development and growth may represent a number of different process at work: some reforms that contribute to financial development (e.g., improving efficiency in payments systems and access to financial services) likely do lead to higher growth while other improvements may be a common factor behind both financial development and economic

<sup>11</sup> Sahay and others estimate a turning point occurring around the 0.45-0.7 range for the financial development index, after which the growth impact reverses. However, for SSA countries, which mainly fall to the left of this range, a linear specification appears to work well, which is reported here (IMF, 2016). The large range of values around which the optimum falls suggests also these estimates should be treated with caution and are subject to considerable variation.

<sup>12</sup> Also see the calculations in Annex II in Sahay and others (2015).

growth (e.g., improving property registers, which allow borrowers to more easily establish ownership of collateral to access credit, also facilitate taxation of land and other assets, thereby improving domestic revenue mobilization).



## B. Recent Credit Developments, Growth, and Stability

**27. Developing the financial sector needs to address gaps along multiple dimensions.** Just as the indicators developed to provide a view on the level of financial development incorporate information on many aspects of financial development, strategies to address the gaps should also be multifaceted. In this context, it is instructive to examine how credit, a key factor in both financial development and financial stability, is linked to growth.

**28. Credit growth on its own has had a limited short-term impact on economic growth in Tanzania.** A series of simple vector autoregressions (VARs) to examine a possible nexus between (and feedback from) real GDP growth and real private sector credit growth (both total and by sectors) were run. The results for overall credit growth and GDP are shown below. There are limits to this approach: the relationship between credit and growth is a structural, long-term issue but the VAR may just capture the short-run effect of the variables, and may miss a possible long-run relationship (GDP and credit may be cointegrated),<sup>13</sup> as well as the impact of other variables that

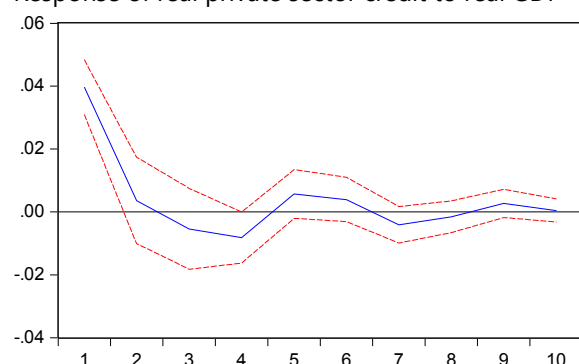
<sup>13</sup> We also ran a Granger causality test between real private sector credit and real GDP and there was no evidence that either variable Granger-caused the other. A Johansen system cointegration test between the variables and could (continued)



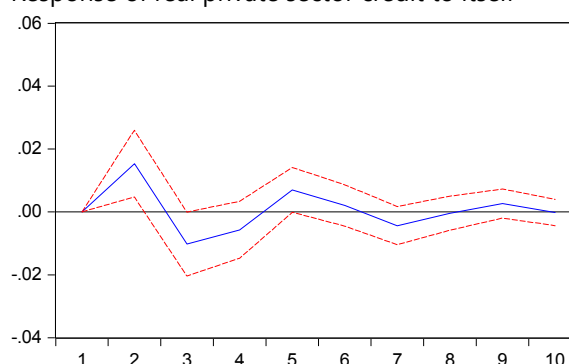
have been considered in the growth regression literature. Notwithstanding those caveats, the impact mostly runs from GDP shocks to credit growth. However, the impact is short-lived with most of the impact dying out in one quarter. In the opposite direction, there appears to be little effect of a shock to credit on GDP growth. This does not mean that going forward, the credit-growth nexus will remain weak: indeed, with further financial development, this relationship is expected to strengthen.

**Figure 13: Tanzania: Credit-Growth Nexus—Results from Vector Autoregression Analysis**

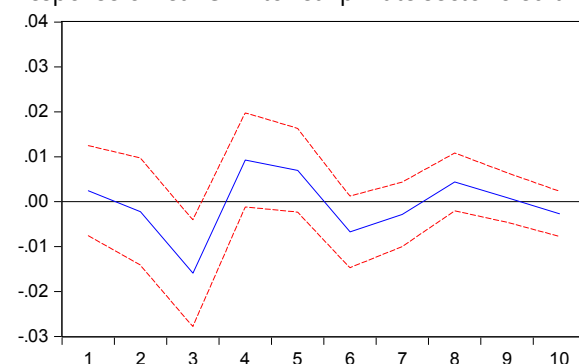
Response of real private sector credit to real GDP



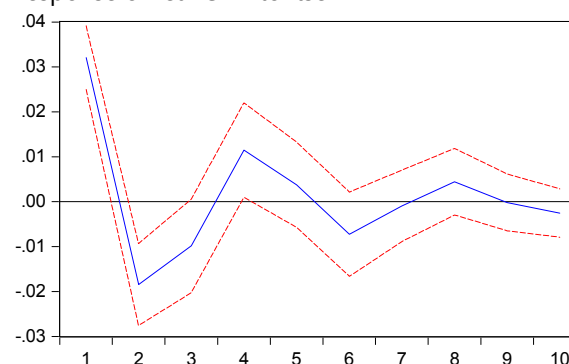
Response of real private sector credit to itself



Response of real GDP to real private sector credit



Response of real GDP to itself



First difference of natural logs were used for real private sector credit and real GDP. Data are quarterly.

**29. Tanzania has experienced especially rapid credit growth over the last two years.** For most of the period since June 2014, private sector credit has expanded at 20 percent or higher on a nominal basis (Figure 14). The growth primarily is from loans to the trade sector, personal loans, other services and manufacturing. Loans to the real estate sector only accounted for 4.4 percent of total loans, though the rapid growth (over 35 percent in December 2015) meant it contributed

not reject the null hypothesis of no cointegrating relationships between the variables, though the short time series available could be a factor for this result.

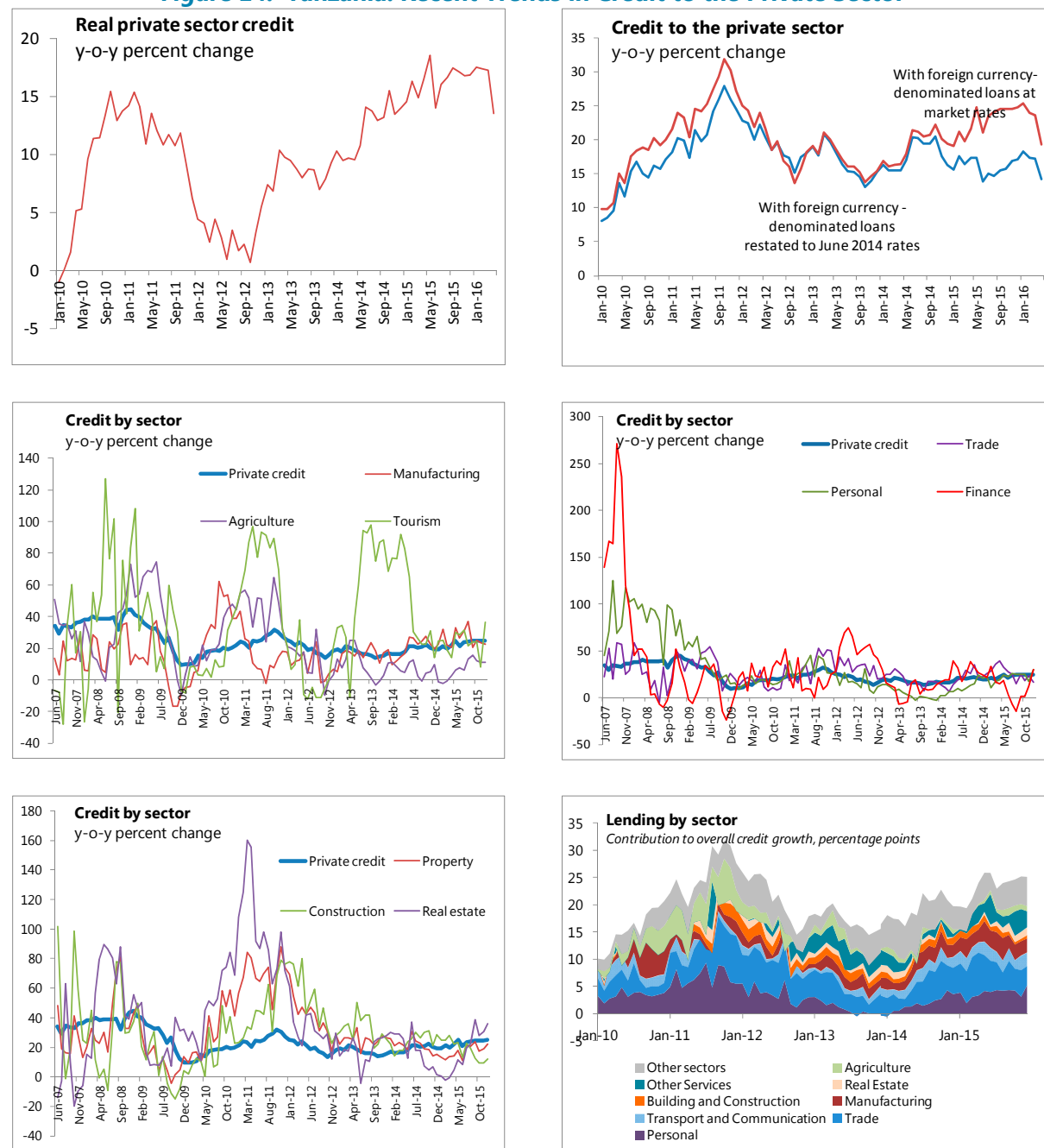
nearly 1.5 percentage points to loan growth (or 6 percent of the overall increase). The upcycle, which began after September 2013, appears relatively long-lived compared to recent credit upturns. In the most recent period, this growth reflects to some extent the effect of the revaluation of foreign currency denominated loans in the context of the significant depreciation experienced in 2015. Nevertheless, even allowing for that, credit growth has been both persistent and relatively strong.<sup>14</sup>

**30. There is no evidence that the private sector credit-to-GDP ratio in the recent period has significantly outpaced its trend.** In light of the strong and persistent credit growth, the question is whether this reflects a healthy deepening of the financial sector or a more worrying sign of an unsustainable pick-up in leverage. Unfortunately, distinguishing between the two is difficult for most countries, but especially for an economy like Tanzania that can be experiencing significant structural changes. Nevertheless, it can be useful to look at the deviation of the credit-to-GDP ratio from its trend rate. This crude measure (Figure 15) suggests that the credit-to-GDP ratio has not deviated from its trend.

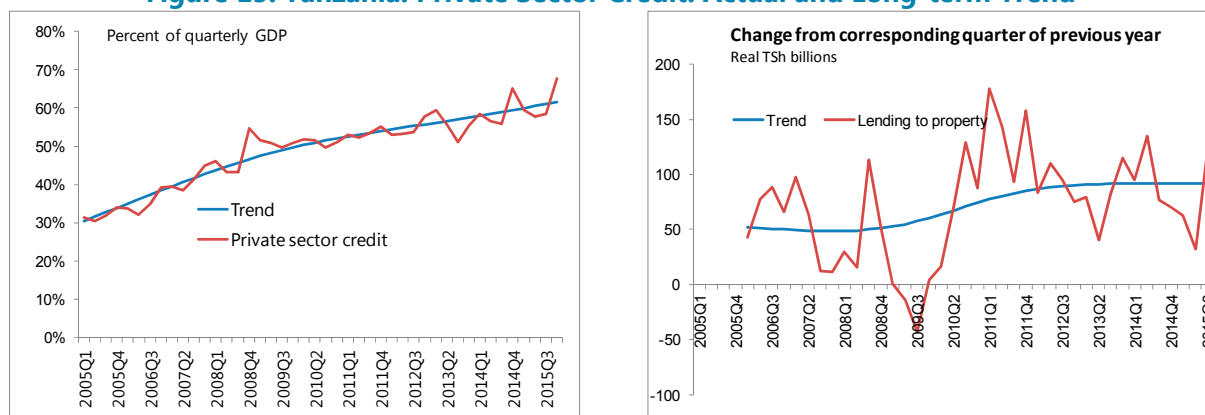
**31. However, lending to the property sector bears careful monitoring.** As noted earlier, lending to the real estate sector has contributed more-than-proportionately to overall loan growth. A broader measure of lending to the property sector (combining real estate and construction- and mortgage-related lending) shows some evidence of an upswing in recent months. In 2015, the BoT loosened the prudential limits governing loan-to-value ratios on mortgages from 80 to 90 percent, and lengthened the maximum allowable tenure of these loans from 20 to 25 years. The data to assess the impact of this change is limited and the proxies used are not fully comprehensive: a large part of lending related to the property sector is thought to be covered by personal credit as the practice in Tanzania is for homeowners to take small loans to purchase land and make gradual improvements on their properties. These loans, usually given to civil servants and others employed in the formal sector, are secured against salaries, which are seen as highly secure. To address these data limitations, the BoT has embarked on a pilot effort to compile house prices, beginning with Dar es Salaam starting in 2016, with a view to expanding the work to other major metropolitan areas in 2017 and beyond.

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<sup>14</sup> The depreciation of the exchange rate on its own does not appear to have had an impact on financial stability. Banks have very small net open FX positions, in part due to the BoT's tightening of these limits. Further, banks' large corporate customers tend to have both large FX deposits, and FX-denominated loans, which may have limited the impact of exchange rate movements on their balance sheets.

**Figure 14. Tanzania: Recent Trends in Credit to the Private Sector**

Source: Bank of Tanzania, staff's calculations.

**Figure 15. Tanzania: Private Sector Credit: Actual and Long-term Trend**

Source: Bank of Tanzania, staff's calculations.

The trends are computed using a Hodrick-Prescott filter.

## C. Assessing the Macroeconomic Impact of Mobile Money

**32. Mobile money in Tanzania is linked directly to the banking system.** Mobile money in Tanzania is created by a customer making a cash deposit with an agent of an MNO, or by transferring money from his or her bank account into a mobile money wallet. The MNO will make a corresponding cash deposit in a mobile trust account. Therefore, an increase (decrease) in mobile money driven by client deposits (withdrawals) will see a reduction (increase) in currency in circulation and an increase (reduction) in deposits with the banking system. The means by which mobile money is created or redeemed is therefore neutral on broad monetary aggregates, at least to a first approximation. To see why, consider changes to items in stylized balance sheets of the central bank and commercial banks that are affected by the creation of a mobile money deposit. Let us assume that clients increased their deposits in trust accounts by 100, and paid for this by reducing currency in circulation by the same amount (i.e., cash in hand is traded for deposits).

### Central bank

Assets	Liabilities
	Currency in circulation: -100
	Bank reserves: +100
Net impact on reserve money = 0	

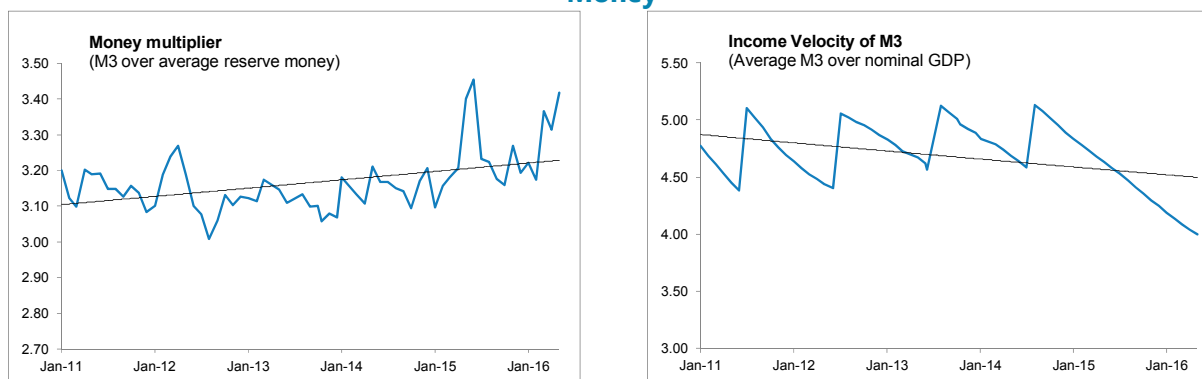
### Commercial bank

Assets	Liabilities
Bank reserves: +100	Deposits: +100
Net impact on commercial banks' balance sheet = +100	

In the example above, the initial creation of mobile money simply transforms currency in circulation (cash held by the public) into commercial bank reserves, which leaves  $M0$  unchanged. Further, the broader monetary aggregate ( $M$ ) also remains the same: while commercial banks' balance sheets grow larger, the increase in deposits is offset by changes in the balance sheet of the central bank.

**33. However, shifting from this static view to a more dynamic one suggests that the impact of mobile money would be to increase the money multiplier.** Over time, one would expect part of the increase in deposits to be lent out or otherwise invested. In this case, we would expect to see a reduction in bank reserves, and an increase in other assets, which in turn should see  $M$  increase through the normal credit accelerator process. In essence, we should expect that by transforming cash into deposits,  $M$  increases even when  $M0$  is unchanged; i.e., the money multiplier has increased. There is some evidence that this is indeed what has occurred.

**Figure 16. Tanzania: Estimates of Money Multiplier and Income Velocity in an Era of Mobile Money**



Source: Bank of Tanzania, staff's calculations

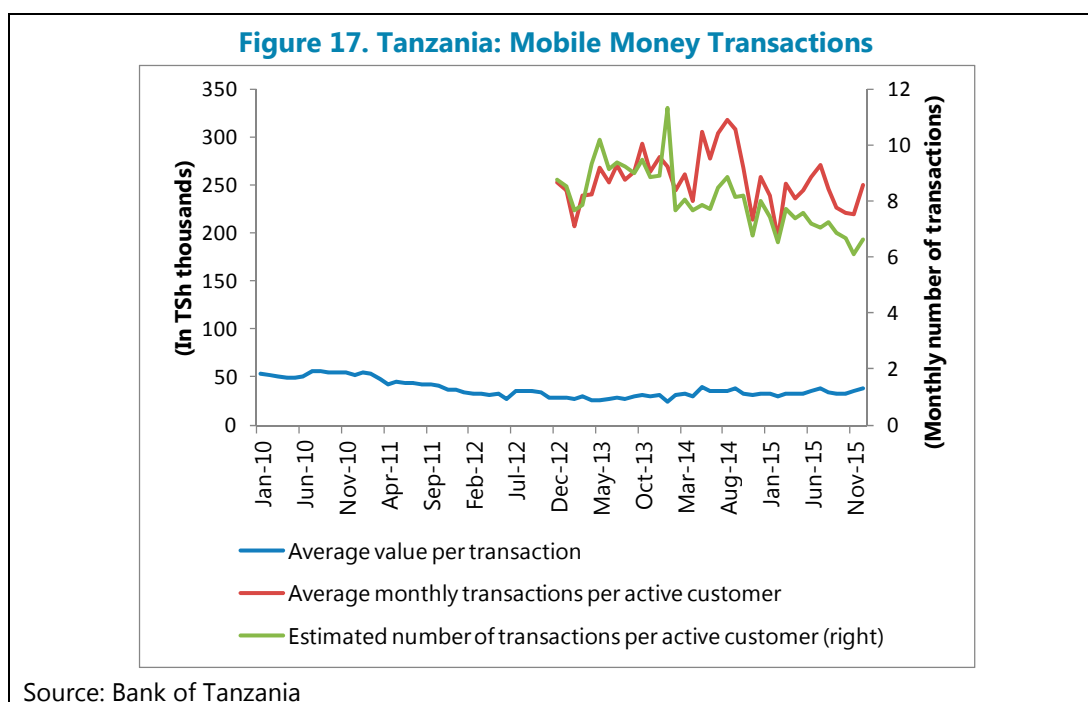
**34. A higher money multiplier signals that mobile money is likely to lead to a positive impact on efficiency and growth.** While a simple examination of the quantity equation shows that the initial impact of higher monetary growth would be to raise nominal GDP, the source of this growth (higher money multiplier) is likely to have a positive effect on growth. The primary impact of mobile payments has been to reduce transaction costs in Tanzania,<sup>15</sup> which in turn suggests that the source of nominal income growth comes from higher real activity rather than inflation. Further, economic activity that had previously been constrained by a lack of cash could move forward more effectively and with fewer interruptions than before, raising potential output.

**35. When compared to cash, there is little evidence that mobile money is fuelling an unsustainable increase in spending.** As noted earlier, mobile money platforms in Tanzania are primarily devoted to facilitating funds transfers and payments. The available data can be used to estimate the transactions velocity of mobile money.<sup>16</sup> The average value per transaction has fallen since the introduction of mobile money, but has stabilized at just under TSh 30,000 (about US\$18). The estimated monthly mobile money transactions per active customer has been fluctuating around an average of TSh260,000 (about US\$160). During this period, the estimated number of transactions per active customer is on average about 9 per month. Weil, Mbiti and Mwega (2012) report a similar trend in what they call the “transaction velocity” of mobile money in Kenya (corrected for floats outstanding, which we have not been able to do for the Tanzanian data), which has increased from

<sup>15</sup> Aron (2015) reports that previous studies focused on Kenya report substantial reduction in transaction costs to transfer funds using mobile money platforms, as much as 60-80 percent of costs of alternatives (banks, post office transfers, fund transfer companies like Western Union, or physical delivery of the cash by the payee or his agent). We would expect similar findings in Tanzania.

<sup>16</sup> The empirical methodology applied is broadly similar to the one used by Isaac Mbiti and David Weil (2011) and Weil, Mbiti and Mwega (2012) assessing the implications of mobile money in Kenya. They do refine their estimates further including by removing estimated balances kept by M-pesa agents.

about 2 transfers per month in 2007 to about 4 in early 2010. More importantly, the increase in their estimated transaction velocity in Kenya (and our less precise estimate for Tanzania) still remains below that of cash and other monetary components that were reported in a variety of studies that span a number of countries and over time. The increase in transactions velocity of mobile money on its own is therefore unlikely to be a source of concern in relation to monetary policy. Work done by Mbiti and Weil (2011) in Kenya and Aron, Muellbauer and Sebudde (2015) in Uganda seems to confirm the irrelevance of mobile money in explaining inflation in both those countries.

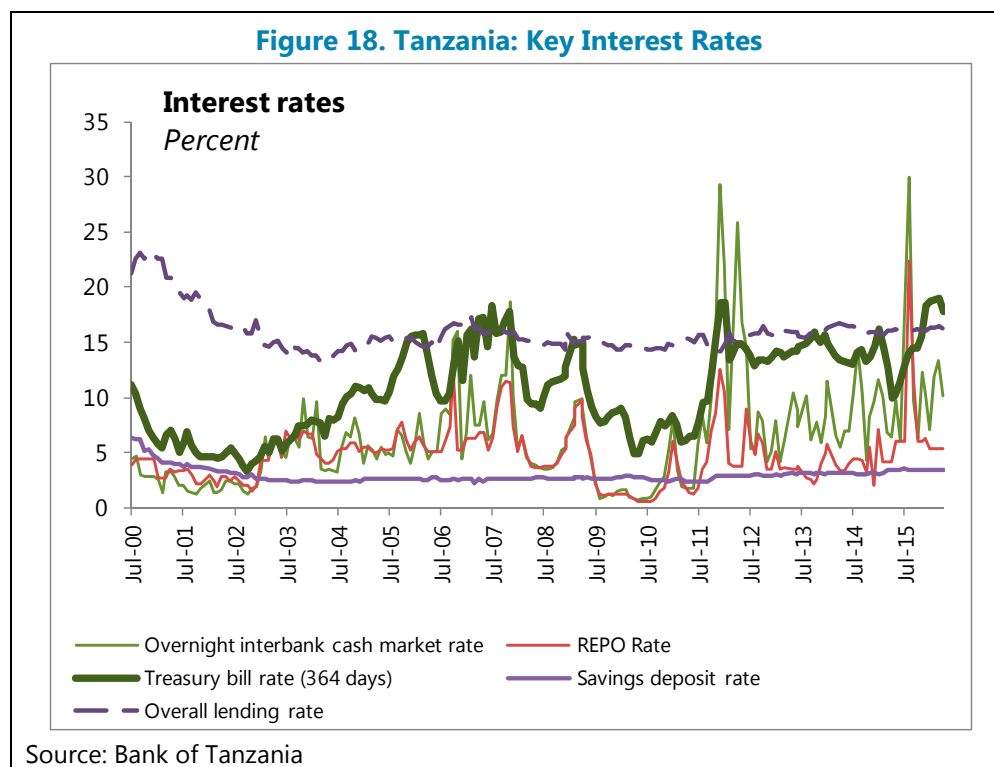


## D. Development of Financial Markets and Implications for Macroeconomic Policies

**36. The development of non-bank financial markets and institutions needs to be stepped up.** While Tanzania has a range of markets and players, their current size and scale is small relative to other frontier market economies and middle-income countries. In particular, the benefits of capital account liberalization have not materialized thus far as there continues to be no foreign participation in the debt markets.

**37. The lack of market development stymies the monetary transmission mechanism and adversely impacts the effectiveness of macroeconomic policies.** While monetary policy has been relatively successful at controlling inflation in recent years, the monetary transmission mechanism appears relatively weak. The interest rate channel, which is often considered the main monetary transmission channel, appears weak in Tanzania, where bank lending rates seem insensitive to monetary policy decisions (Figure 18). This section documents this issue and argues that monetary policy effectiveness could be increased by modernizing the monetary policy framework, improving

the functioning of and developing the interbank and government debt market, and increasing the coordination of monetary and fiscal policies. Such measures would also improve the effectiveness of fiscal policy.



### A weak monetary transmission mechanism in Tanzania

**38. Interest rate pass-through provides a critical link between monetary policy decisions and targeted variables.** Central banks particularly those using interest rates as their operating target, normally operate at the lower end of the yield curve, aiming to influence overnight interbank market rates with their policy decisions. These changes are then transmitted to longer-term money market rates (longer-term interbank loans, treasury bills), starting from short maturities and moving to longer maturities through the yield curve. Next, the changes in market rates pass through to commercial bank lending and deposit rates, which in the final phase of monetary transmission affect savings, investments and consumption, and therefore aggregate demand and ultimately inflation.

**39. The correlation between the overnight interbank rate and the 3-month T-bill rate has become very low in the recent period.** The overnight rate has been highly volatile, particularly in 2015, while the 3-month T-bill rate has had a much smoother trajectory in the past few years (Figure 19). The correlation coefficient between the two rates was only 0.03 in 2012-15. Surprisingly, this coefficient was much higher in previous years, amounting to 0.86 in 2007-11.

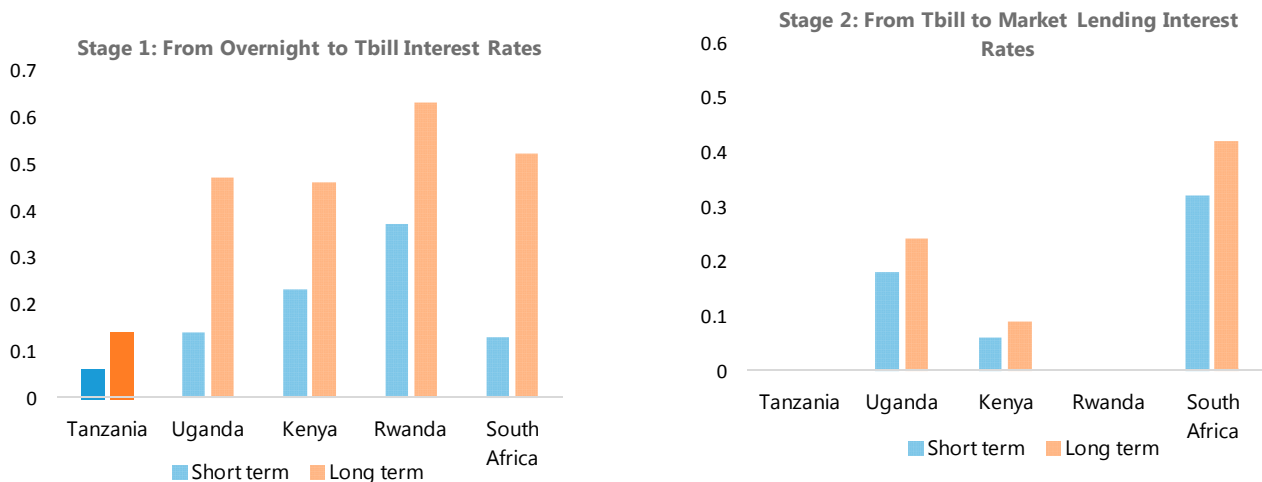




**Table 1. Interest Rate Pass-through Estimates for Selected SSA Countries**

		Tanzania		Uganda		Kenya		Rwanda	South Africa	
		2007-2011	2012-2015	2007-2011	2012-2015	2007-2011	2012-2015	2010-2015	2008-2011	2012-2015
Stage 1	Short-term	0.3	0.06	0.05	0.14	0.15	0.23	0.37	0.14	0.13
	Long-term	0.41	0.14	0.16	0.47	0.56	0.46	0.63	0.28	0.52
Stage 2	Short-term	0	0	0	0.18	0.04	0.06	0	0.42	0.32
	Long-term	0	0	0	0.24	0.06	0.09	0	0.78	0.42

Source: IMF staff estimates

**Figure 20. Interest Rate Pass-through Coefficients (2012-15)**

Source: IMF staff estimates.

**41. Earlier studies also found that the transmission mechanism was weaker in Tanzania than in Kenya and Uganda.** Using a narrative approach, Berg and others (2013) analyzed the significant tightening of monetary policy that took place in 2011 in Kenya, Uganda, and Tanzania. The event study suggested that there were differences in the strength of the transmission among the three countries that the authors attributed to the nature of the policy adjustment and regime. In particular, the transmission was the clearest in Kenya and Uganda, where the regimes used policy rates to signal changes in the monetary policy stance and explicitly prioritized the inflation objective. It was less clear in Tanzania, where lending rates failed to respond, perhaps reflecting the fact that the money targeting regime led to highly volatile short-term interest rates and hence made it harder to discern the stance of policy.

## Monetary policy effectiveness: The role of policies and financial markets

**42. The Bank of Tanzania uses reserve money as its operating target, broad money (M3) as its intermediate target, and a variety of instruments to maintain low and stable inflation.** It attains its reserve money targets primarily by choosing its path of sales of foreign exchange, as well as through repo and other operations (including, occasionally, changes in reserve requirements). The policy rate is not actively used; it has not been changed in recent years.

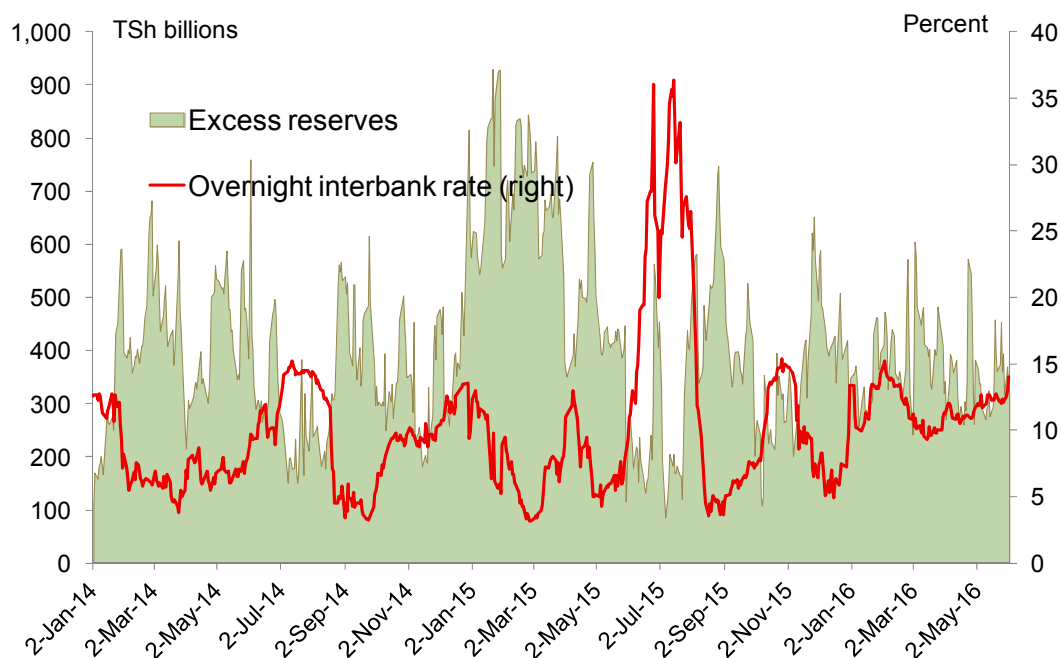
**43. The conduct of monetary policy is complicated by a number of factors related to government operations.** These include: (i) the impact of foreign donors' funding of the budget and development projects, which leads to large injections of liquidity that need to be sterilized to meet the reserve money targets; (ii) government access to central bank advances, which introduces an element of unpredictability in liquidity developments, and can also lead to crowding out as advances tend to be lasting; (iii) the management of central government accounts in the banking system, which are volatile, carry a high reserve requirement, and therefore require banks to hold large precautionary reserves; and (iv) the government's own liquidity management weaknesses.<sup>18</sup>

**44. Beyond the focus of monetary policy on quantities rather than prices, other factors contribute to the high volatility of the overnight interest rate, which blurs monetary policy signals.** A first factor is the design and use of some monetary policy instruments. There is no effective cap on short-term rates given that the Lombard facility is based on current market rates. In addition, this facility has on (rare) occasions been suspended. Banks also cannot yet average required reserve compliance. Finally, the rates at which open market operations (OMOs) are conducted seem largely disconnected from market rates.<sup>19</sup> A second set of factors are structural issues affecting the depth of the interbank market. Liquidity is concentrated among a few banks and there is a general lack of active liquidity management by banks. A true repo market (where the ownership of collateral changes hands, rather than one where the collateral is pledged but ownership remains with the borrower) that would encourage more active trading of liquidity is not yet available. Finally, price discovery is weak, partly reflecting limited available information. All these factors tend to increase the volatility of short-term interest rates. In periods of stress, the interbank rate can indeed record huge gyrations (e.g., from less to 5 percent to more than 35 percent from May to July 2015, Figure 21). Volatility, in turn, increases the uncertainty about the monetary policy stance and undermines the transmission mechanism.<sup>20</sup>

<sup>18</sup> The latter can be illustrated by the decision to front load the execution of capital expenditures in the 2014/15 budget, which was not consistent with financing plans and eventually led the BoT to convert liquidity papers (i.e., T-bills issued for liquidity management purposes, with the corresponding proceeds kept in blocked accounts at the BoT) into financing papers, with the corresponding release of large amounts of liquidity.

<sup>19</sup> When absorbing liquidity, the BoT often operates at a rate well below the published minimum IBCM rate. The OMO interest rates seem virtually inelastic to the change in the IBCM and the liquidity situation.

<sup>20</sup> The IBCM overnight interest rate index calculated daily by the BoT is characterized by a large dispersion of rates on any given day and is also very volatile from one day to the next.

**Figure 21. Tanzania: Excess Reserves of Commercial Banks and Overnight Interbank Rates**

Source: Bank of Tanzania

**45. The pass-through of interbank rates to T-bill rates may also be hampered by certain practices.** In the second half of 2015 the number of unsuccessful T-bill auctions increased significantly. Out of the 96 T-bill auctions conducted from July to early December, more than half were undersubscribed, with short maturities performing particularly badly.<sup>21</sup> This development was all the more surprising that banks, which are the main buyers of T-bills, did not face a particularly tight liquidity situation during that period, judging from the level of their excess reserves. Discussions with banks suggested that a possible factor behind this development was the perception that interest rates on T-bills (and T-bonds) would not be allowed to go beyond a certain level, which may have affected the level of their bids. This perception might have been fuelled by the absence of a clear mechanism used by the authorities to select and eliminate off-market bids ("outliers").

<sup>21</sup> Similar developments characterized the T-bond market during that period.

**Fiscal policy effectiveness: The role of policies and financial markets**

**46. The government debt market remains relatively small in Tanzania.** The total stock of T-bills and T-bonds amounted to about 7 percent of GDP in mid-2015, with T-bills representing about 30 percent of this total. Other depository corporations were by far the main holder of government securities (about 63 percent), with the rest held by the BoT, pension funds and insurance companies. Although EAC residents are allowed to buy and hold such securities, there is no evidence that this has happened yet. Liquidity in the secondary bond market is very low and has declined in recent years.

**47. A shallow government debt market (and more generally financial system) affects fiscal policies in multiple ways:**

- Re-financing and interest rate risks. With a significant part of domestic debt used to finance the budget issued at relatively short maturities, the liquidity risks faced by the government are significant.<sup>22</sup> When market liquidity dries up, which may happen more often when the investor base is not diversified, the government faces difficulty in rolling over its debt. Short maturities also expose the government to significant interest rate risks.
- Fiscal cost. A shallow financial market contributes to higher financing cost for the government. These costs are high in Tanzania for all maturities. For instance, the yield at issuance for government securities with maturities of two to five years was in the 12-15 percent range in recent months, and that of securities with maturities above five years was in the 15-17 percent range. During that period, inflation remained below 7 percent, leading to high real interest rates. High real rates, which are common to many LICs, reflect a number of factors. In Tanzania, some of them are likely macroeconomic in nature (e.g., financing requirements of the government might be large in comparison with the size of the market; reducing the fiscal deficit and domestic financing would then lead to lower real rates), while others are related to structural issues, such as: constraints arising from the collateral framework, wherein longer dated papers (i.e., anything above 6 months remaining maturity) are not accepted; shortcomings in banks' liquidity forecasting and management which create a preference for liquidity and hinder larger investment in longer maturity papers; constraints arising from how standing facilities operate and reserve requirements are defined; the lack of a secondary market; unpredictable changes in monetary policy; controls on inflows that prevent foreign funds from adding liquidity to the markets; and rates at which open market operations are conducted, which appear to be low compared to market rates.

<sup>22</sup> The authorities' most recent Medium Term Debt Management Strategy (December 2015) notes that the share of total domestic debt (which also includes non-marketable securities) maturing within one year is 21.6 percent. This share has increased in the recent period due to the conversion of liquidity papers (T-bills used by the BoT for liquidity management purposes) into financing papers.

- A shallow financial system limits the government's scope to run counter-cyclical policies in the event of a temporary shock or to substitute domestic financing to external financing when the latter falls short of targets (as has occurred in the recent past). This, in turn, increases the need for fiscal adjustments. Such adjustments have affected first and foremost the pace of execution of investment projects, which increases their costs. When expenditure adjustments have not fully taken place, arrears have ensued.
- Financing public investment. A shallow financial system limits the ability of the government and state-owned enterprises to finance long-term investment with large economic and/or social rates of return. This is relevant for Tanzania, where the recently adopted 5-year development plan tries to address energy and transportation infrastructure gaps.

**48. Fiscal policy effectiveness has also been affected by policy weaknesses.** As discussed in recent IMF staff reports, recent budgets have often been built on unrealistic revenue and financing projections, which have required painful and inefficient expenditure adjustment in the course of the fiscal years. These adjustments were not fully effective either, leading to arrears accumulation. As a result, the government has not always been able to meet its deficit targets or protect investment expenditure. Lack of realism has also affected the expected volume of domestic and external financing, as well as the timing of financing within the fiscal year, raising challenges for expenditure execution (and monetary policy implementation, as underscored above).

## POLICY IMPLICATIONS

### A. Strengthening Financial Development

**49. Further financial development in Tanzania has the potential to unlock growth.** The main priority is to improve access to financial services and infrastructure for firms, where Tanzania lags regional peers. While work to improve financial inclusion among households has clearly borne fruit, firms continue to report difficulties in accessing financial services, not just credit. In particular, SMEs' access to financial services remains low. Boosting credit will likely not be sufficient to sustain economic growth. On the contrary, the BoT should monitor developments in the property sector carefully, and stand ready to take necessary action, including the imposition of prudential measures, should the growth turn out to be excessive. Over the longer term, removing impediments to a healthy credit growth (strengthening credit information systems, improving access to collateral, expanding financial access through both traditional and innovative means) will allow for a sustained and healthy increase in credit. Further, greater financialization of the system is likely to strengthen the credit-growth nexus over time.

**50. Over the medium to long term, a key focus should be on improving the efficiency of banks.** It is noteworthy that the progress on reducing costs has stalled on average, and in the case of overheads, reversed. Strengthening banks' efficiency stands to benefit both banks and their clients: costs savings can be shared with customers even as profitability improves. Tanzania is

especially well-placed to enjoy these benefits due to its well contested and less concentrated banking system. However, some banks do exhibit serious concerns with low profitability and lack of meaningful capital buffers. A strategy to address these banks is needed. The development of non-bank financial institutions, which can become reliable long-term investors that create demand for longer term securities, also needs to be encouraged.

## **B. Assessing the Regulatory Framework for Mobile Money**

**51. Regulations that ensure confidence in mobile money platforms are vital for its continued growth.** The rapid growth of mobile money is contingent on the public's confidence that payments can be safely, securely, and efficiently processed and that mobile money deposits are available for conversion and transfer at all times. In this context, it is useful to examine the current state of regulations governing electronic payments and assess where further work is needed.

**52. In 2015, Tanzania modernized its legal framework governing electronic payments, including mobile money** (Box 1). The recently passed National Payments System Act, 2015 and the associated regulations cover all service providers, including MNOs, support service providers including those that build and maintain mobile payments platforms for the MNOs, and banks that accept deposits arising from the issuance of mobile money. The framework also clarified the roles of the joint regulators, the BoT and the Tanzania Communications Regulatory Authority (TCRA).

**53. However, full pass-through of deposit insurance coverage to individual mobile money accounts has not taken place.** While the deposit insurance scheme covers the trust accounts, each trust account is eligible for the uniform coverage limits (currently TSh 1.5 million per depositor). This is due to the lack of full information of each account holder. The BoT is considering options to achieve full coverage but there is no timeline to achieve complete pass-through. No other deposit insurance scheme protecting individual mobile money account holders is currently in place.

### Box 1. The Regulatory Framework for Electronic Payments

**The recently revised legal framework governing electronic payments covers a range of participants and clarifies the respective roles of the key regulators.** The framework, set out in the National Payments System Act, 2015, sets out a unified regulatory umbrella covering mobile money issuers (i.e., the MNOs that create the platforms), providers of support services, and financial institutions used in the system and is jointly administered by the BoT and the Tanzania Communications Regulatory Authority (TCRA). In particular, Part IV of the Act specifies that any issuer of mobile money must be registered and licensed by the BoT. Further, the BoT also has substantial leeway to impose capital and other requirements on operators, as well as oversight over specific activities and even the governance structure of these companies.

**Regulations are also in place to safeguard deposits related to mobile money issued.** Specifically, the regulations require that deposits underpinning mobile money issued are held with licensed commercial banks in ring-fenced trust accounts before operations can begin. It also requires the creation of a subsidiary that will be responsible for the issuance of mobile money and sets out minimum capital requirements (currently TSh 500 million). The rules also place limits on the concentration of trust accounts in commercial banks. Currently, no bank may accept trust account deposits in excess of 50 percent of core capital, while a mobile money operator may not keep funds exceeding TSh 500 million with any single bank.<sup>1</sup> The regulations also allow for reimbursement of individual customers' accounts arising from interest paid on trust accounts. To date, two MNOs have distributed at least part of the interest earned on trust accounts into their customers' mobile wallets. The BoT is exploring options to encourage MNOs to do so going forward in an attempt to encourage the use of mobile money as a savings instrument.

**Rules governing transfers and withdrawals are calibrated to meet AML/CFT rules.** For instance, customers who only register electronically and not in person with acceptable identification may only transfer a maximum of TSh 1 million daily, and may have a maximum daily balance of TSh 2 million. This rises to TSh 3 million and TSh 5 million respectively for customers who have registered in person. Similarly, enterprises have different requirements and limits based on their size, with larger enterprises having no limits, in return for which obligations to meet Know Your Customer/Customer Due Diligence (KYC/CDD) rules are imposed. Finally, the regulations also allow mobile money agents to maintain a float to enable them provide liquidity to the system and allow transactions to clear.

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<sup>1</sup> There is, however, the question of whether the limits are too low. In particular, the limit of TSh 500 million per MNO per bank implies no bank may hold more than TSh 2 billion in these accounts, which in turn would require an unfeasibly high number of banks for both MNOs and banks to comply with the rules.

#### 54. The new regulations are an important improvement but further work is needed.

Khiaonarong (2014) sets out a useful framework for assessing the regulatory and supervisory framework underpinning electronic payments platforms, including mobile money. Rules that specify capital requirements for MNOs and govern the establishment of trust accounts (including provisions to prevent the concentration of deposits) go some way in mitigating risks. However, there remain a number of questions, mostly relating to addressing medium-term concerns regarding operational risks and contingency planning in the event of tail events, that are yet to be fully resolved, including:

- How to handle access and participation risks: what if a bank, an MNO or other service provider in the system runs into difficulties? Do the rules to set up subsidiaries, trust accounts, etc. address these risks adequately?



- Credit and liquidity risks: can the envisaged centralized switching system handle settlements? Are there risks arising from end-day settlements between MNOs?
- Are there risks from expanding to cover cross-border transactions? How frequently should settlement take place in these systems?
- Default arrangements: while the BoT is legally empowered to oversee support services, including clearing houses, is it possible to detect and remedy a clearing house with weak risk controls? Who runs these clearing houses?

While these risks appear to be limited at this stage, the rapid growth in mobile money requires these issues be addressed expeditiously.

## C. Financial Market Development

**55. The modernization of the monetary policy framework should be accelerated.** As discussed in Box 2, Tanzania already observes a number of the principles that characterize effective monetary policy frameworks. The remaining ones could be addressed by moving to an interest-based, more forward-looking framework. An important first step in the transition is to try to stabilize banks' excess reserves, which are highly correlated with interbank rates. Once the latter have become more stable, the central bank can start relying more actively on policy rates to guide interbank rates. Forecasting and policy analysis capacity also needs to be further developed and integrated more systematically into the decision-making process. Finally, communication needs to be stepped up and improved, both through the regular publication of information and analyses and exchanges with market participants.<sup>23</sup>

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<sup>23</sup> In this regard, developments since mid-2015 have been very encouraging.

### Box 2. Principles for Effective Monetary Policy Frameworks<sup>24</sup>

- *The central bank should have a clear mandate in terms of its goals, and operational independence to pursue these goals, within the context of public accountability.* This principle is largely met in Tanzania. The monetary policy mandate is set in the BoT Act (2006): “the primary objective of the Bank shall be to formulate, define and implement monetary policy, directed to the economic objective of maintaining domestic price stability, conducive to a balanced and sustainable growth of the national economy of Tanzania”. The BoT has an effective governance and organizational structure and is formally independent. However, while permanent monetary financing of the government is not permitted, weaknesses in liquidity management at the ministry of finance combined with the large and recurrent recourse to central bank advances complicates the conduct of monetary policy (a weak form of fiscal dominance).
- *Price stability should be the primary or overriding objective of monetary policy over the medium term.* While price stability is the ultimate objective of monetary policy in Tanzania, the BoT is also mindful of how the evolution of other variables (e.g., credit to the economy). This has occasionally led to decisions that did not seem entirely dictated by inflation considerations (e.g., the lowering of reserve requirements in late 2014), although the BoT has on average been relatively successful at maintaining price stability in recent years.
- *Consistent with the primacy of price stability, the central bank should have a medium-term inflation objective that serves as the cornerstone for its monetary policy actions and communications.* The authorities have a clear objective, which is to keep inflation close to 5 percent. Communication, however, is not yet systematically anchored on how to reach this target.
- *In determining the magnitude and pace of monetary policy adjustments warranted by the inflation objective, the central bank should carefully take into account the implications for macroeconomic activity and financial stability.* The authorities have largely observed this principle.
- *The central bank should have a clear and effective operational framework and it should align market conditions with its announced policy stance.* This is an area where significant progress can be made. The policy stance is not always communicated clearly to market participants, and communication is complicated by the nature of the operating target (average reserve money growth).
- *The central bank should have a transparent forward-looking monetary policy strategy that reflects timely and comprehensive assessments of the monetary transmission mechanism.* This is an area where significant progress can be made. While monetary policy is broadly formulated taking into account the economic outlook and the inflation objective, capacity limitations do not allow yet a full strategy linking the path for monetary actions and forecasted inflation and an evaluation of future risks and contingency plans in the event of large shocks.
- *The central bank’s communications should be transparent and timely, because clear communication enhances the effectiveness of monetary policy.* This is an area where significant progress can be made. The authorities’ communication does not systematically explain past outcomes and actions necessary to align expected inflation outcomes with the policy objective. Communication in operations has also not always been very clear. For instance, market participants told staff in 2015 that the purpose of FX sales (liquidity management vs. market intervention) was not always clear.

<sup>24</sup> IMF (2015) assessed the experience of countries that have successfully modernized and increased the effectiveness of their monetary policy frameworks. The paper emphasized the diversity of these experiences, but also underscored they all shared a number of principles.

**56. A number of changes to the operational framework would also facilitate the transition to an interest-based policy and the development of the money market.**

The move to partial reserve averaging is critical, as it will help banks absorb unpredictable liquidity shocks and smooth excess reserves fluctuations. The BoT should adopt a more systematic and market-based approach to liquidity management: daily or weekly OMOs should be used to manage short-term liquidity actively within a predefined range of excess reserves; interest rates on OMOs should reflect market conditions, rather than an opportunistic attempt to minimize costs by adjusting volumes. Such OMOs and a better understanding by market participants of the BoT's objectives would improve participation, enhance price discovery and increase banks' ability to predict their liquidity situation. Some features of the Lombard facility should be changed: The facility should always be available; T-bills and T-bonds of all maturities should be accepted as collateral; and the Lombard rate should be de-linked from contemporaneous market rates. Further consolidation of the government's accounts with the BoT could improve efficiency in utilizing the government's financial resources and reduce the need for advances from the BoT, thereby improving liquidity management and forecasting.

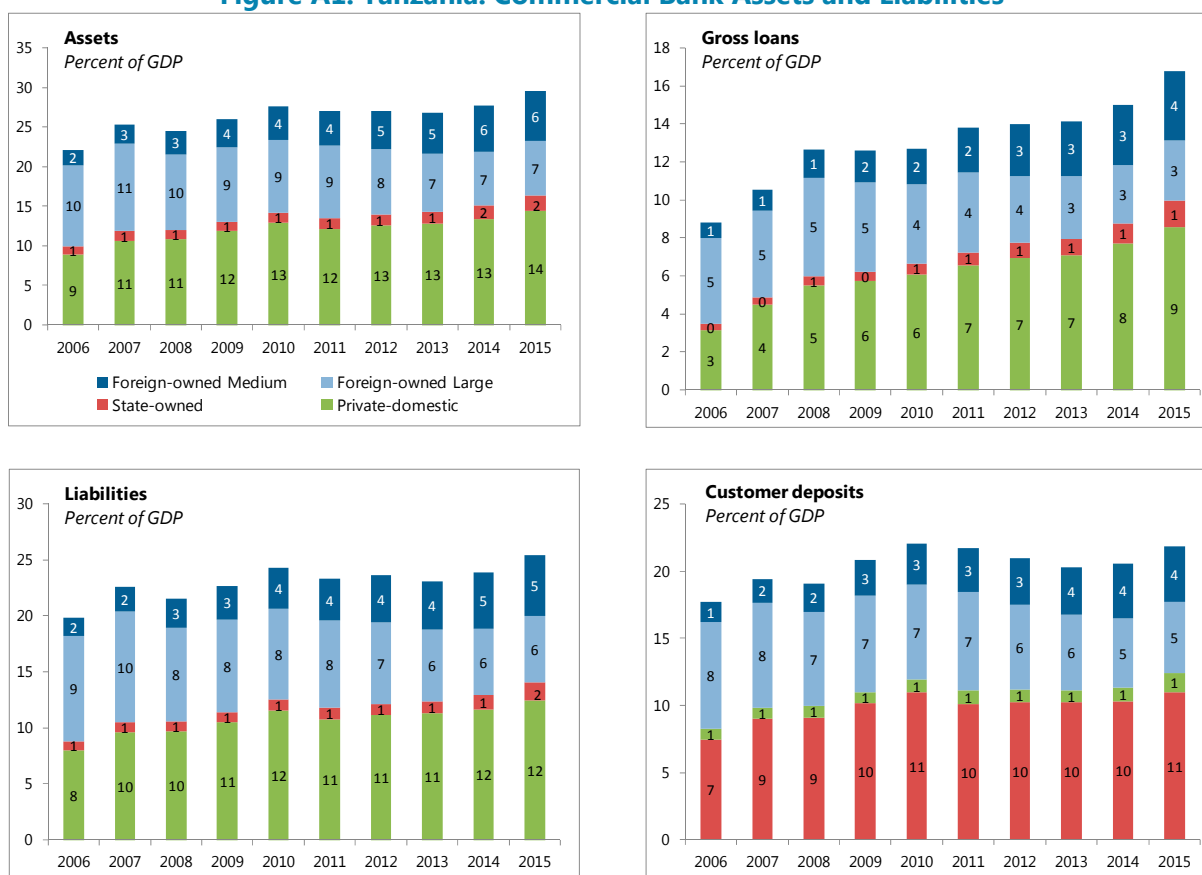
**57. Budget credibility needs to further improve.** Progress was made in this area in 2015/16, with much more realistic revenue projections than in the previous years. More needs to be done in this area, by strengthening forecasting capacity and explaining better to all decision makers the cost of non-credible budgets. Increased debt management capacity, and better coordination with the monetary authorities, should also help improving the realism of financing assumptions, with regards to volume, composition, and phasing. The production of a detailed annual borrowing plan, consistent with the expected execution of the budget, would be a big step in the right direction. Finally, systematic analysis of fiscal risks and development of contingency measures is desirable, as even the most credible budgets have to deal with unexpected developments.

**58. A range of measures could also foster the development of the government debt market.** The government should publish its annual borrowing plan and keep to it. The quarterly bond auction calendar should include aggregate amounts for the individual tenors. Standard amounts (or a narrow range) could be auctioned for each maturity and more transparent rules should be adopted on how the accepted amount may change from the offered amount. Bond series should be reopened and significantly larger series issued to provide the market with more liquid instruments; coupons should reflect current market yields. Tap sales should be phased out. Enhancing communication with market participants would provide quick gains by better tailoring issuance to market conditions. The BoT could take immediate steps to consult regularly with key investors on their investment preferences and trends in the domestic market. More active communication would also help broaden the investor base.

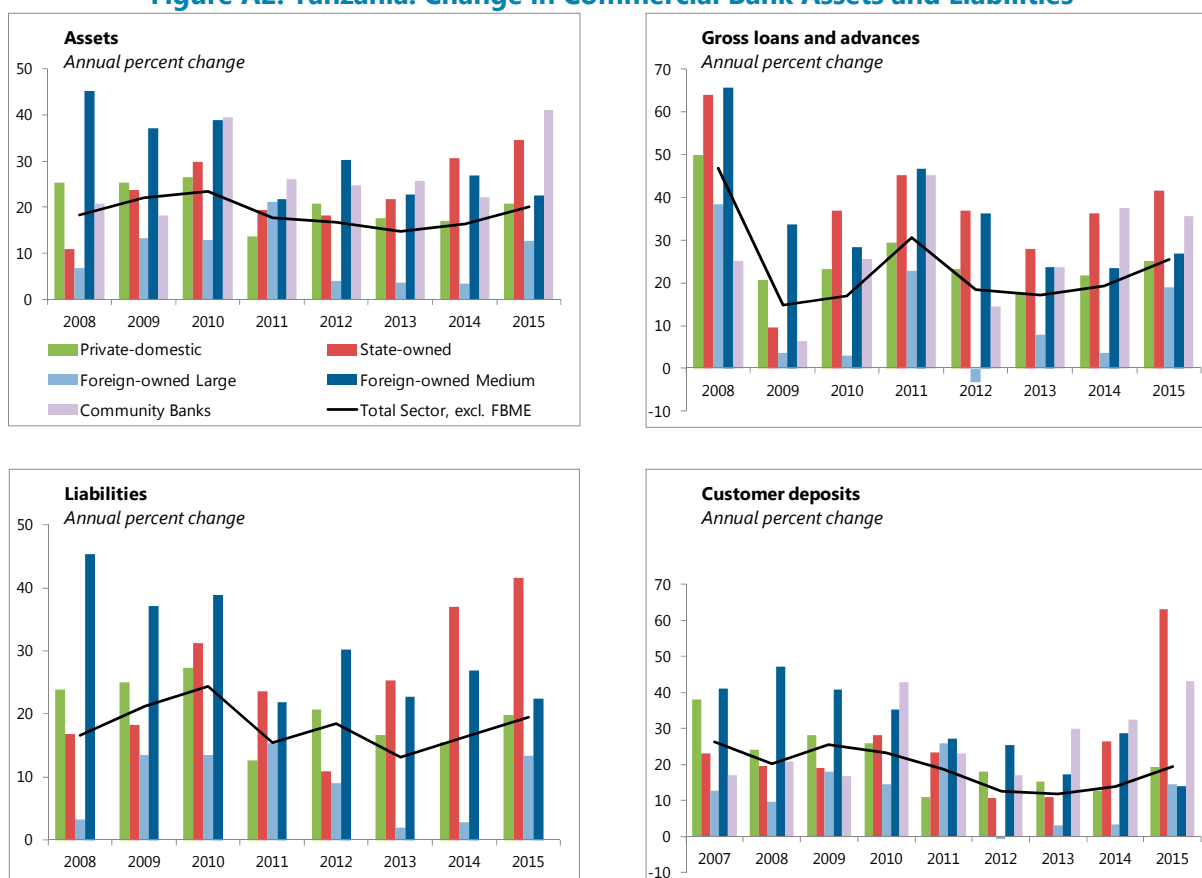
## Annex I. Recent Trends in Commercial Banks' Financial Positions

Despite the continued increase in the number of banks, the increase in assets and liabilities reached a plateau in 2010-13, before rebounding in the last two years (Figure A1). Total assets are now at just below 30 percent of GDP with the aggregate loan portfolio at about 17 percent of GDP. Gross loans increased in 2015 with both foreign-owned and domestic banks expanding their portfolio. Despite the relatively small number of private domestic banks, these contribute the largest share of the deposit base and the loan portfolio, with majority foreign-owned banks following closely. State-owned banks have a relatively small, albeit stable, share of the total loan portfolio. Community banks have a very small share of deposits and loans, but the rate of expansion of both is well above the weighted average the banking system (Figure A2).

**Figure A1. Tanzania: Commercial Bank Assets and Liabilities**



Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

**Figure A2. Tanzania: Change in Commercial Bank Assets and Liabilities**

Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

**Loans constitute the largest share of assets, and this share has increased in most bank segments in recent years.** This trend is particularly noticeable in state-owned banks (Figure A3). The share of loans in total assets is lowest in large foreign-owned banks. The share of assets held in government securities is relatively low and has been declining in recent years in all bank segments except medium-sized foreign-owned banks. On the liabilities side, banks predominantly hold deposits from customers (Figure A4). However, there has been an increase in recent years in other liabilities across all bank segments. This suggests that wholesale borrowing may have become more important as a source of funding (most noticeably in state-owned banks).

**Figure A3. Tanzania: Composition of Assets of Commercial Banks**

Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

**Figure A4. Tanzania: Composition of Liabilities of Commercial Banks**

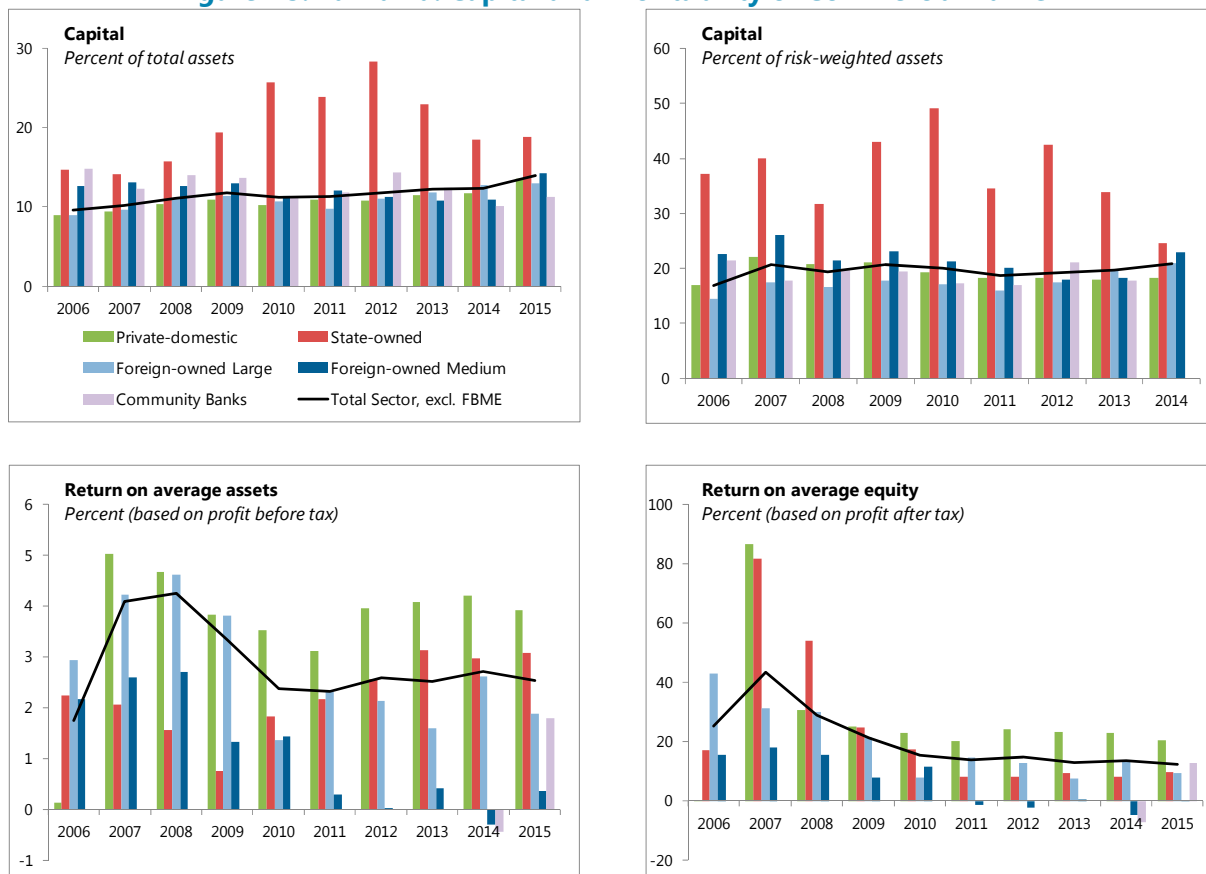
Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

**Commercial banks are generally well-capitalized but there are differences between groups of banks.** The capital-to-total assets ratio has continuously increased since 2010 (Figure A5, upper panel). Domestic and foreign-owned banks have capital-assets ratios of about 14 percent. The group of state-owned banks (in the aggregate) started off with strikingly large capital-assets ratios, albeit these have fallen since 2012. Some state-owned banks have been expanding their asset base faster than their capital base (especially Tanzania Investment Bank, TIB), while a few loss-making banks have drawn down on their capital. Community banks have below-average capital-assets ratios. The capital to risk-weighted assets ratio has also increased in recent years.

**The banking sector is reasonably profitable, with large domestic banks exhibiting significantly stronger financial performance.** The average return on assets has tended to increase in recent years, with domestic private banks outperforming other bank segments (Figure A5, lower panel). The latter's strong financial performance is driven by the two largest banks, CRDB and NMB. Foreign-owned banks have tended to have a less strong financial performance, though some individual banks that have performed better. Medium-sized foreign-owned banks as a group have been barely

profitable for a number of years. The financial performance of state-owned banks as a group has been quite steady, though a few entities are struggling financially. Community banks have tended to perform rather poorly, with some indications of a recovery in profitability in 2015.

**Figure A5. Tanzania: Capital and Profitability of Commercial Banks**



Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

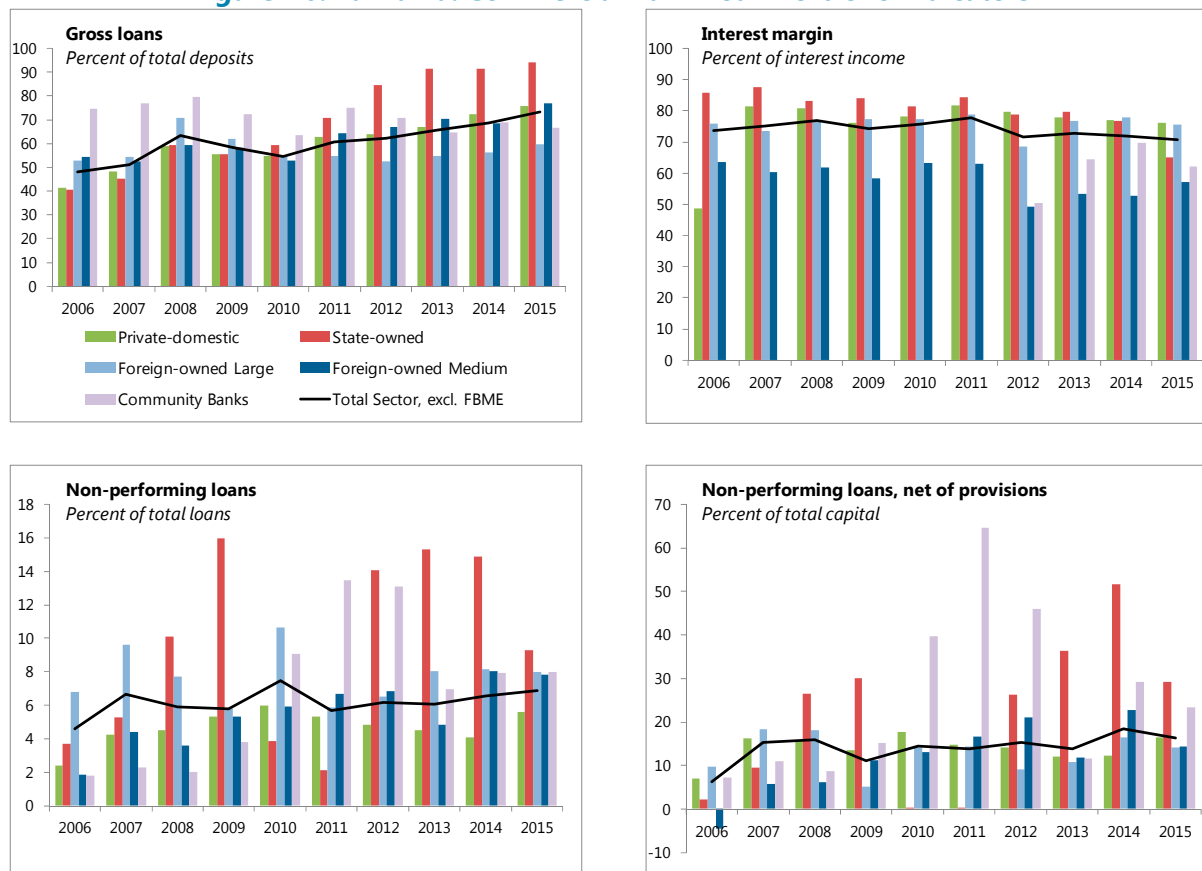
**Lending continues to be primarily deposit-funded, although the increased competition for deposits has led some banks to become more leveraged.** The gross loans to deposit ratio across banks has increased from 55 percent in 2013 to above 75 percent in 2015 (Figure A6). Foreign-owned banks have been aligning themselves closer to domestic banks by increasing their loan to deposit ratio. State-owned banks have been particularly aggressive in terms of expanding their lending activities without being able to grow their deposit base. As a group, state-owned banks now have loan-deposit ratios significantly above 100 percent (mainly explained by the expansion of lending by TIB financed by wholesale borrowing to supplement deposits).

**The non-performing loans (NPL) ratio increased but remains relatively low on average.** The domestically-owned private banks have the lowest NPL to gross loan ratios. The NPL ratios have



deteriorated across foreign-owned banks during the last two years. The NPL ratio in state-owned banks has been volatile – very high ratios in 2013 and 2014 were followed by some improvement in 2015.<sup>25</sup> The ratio of NPLs, net of provisioning for bad loans, relative to total capital has declined on average since the peak in 2014. The largest improvements were in state-owned banks and medium-sized foreign owned banks.

**Figure A6. Tanzania: Commercial Bank Loan Portfolio Indicators**

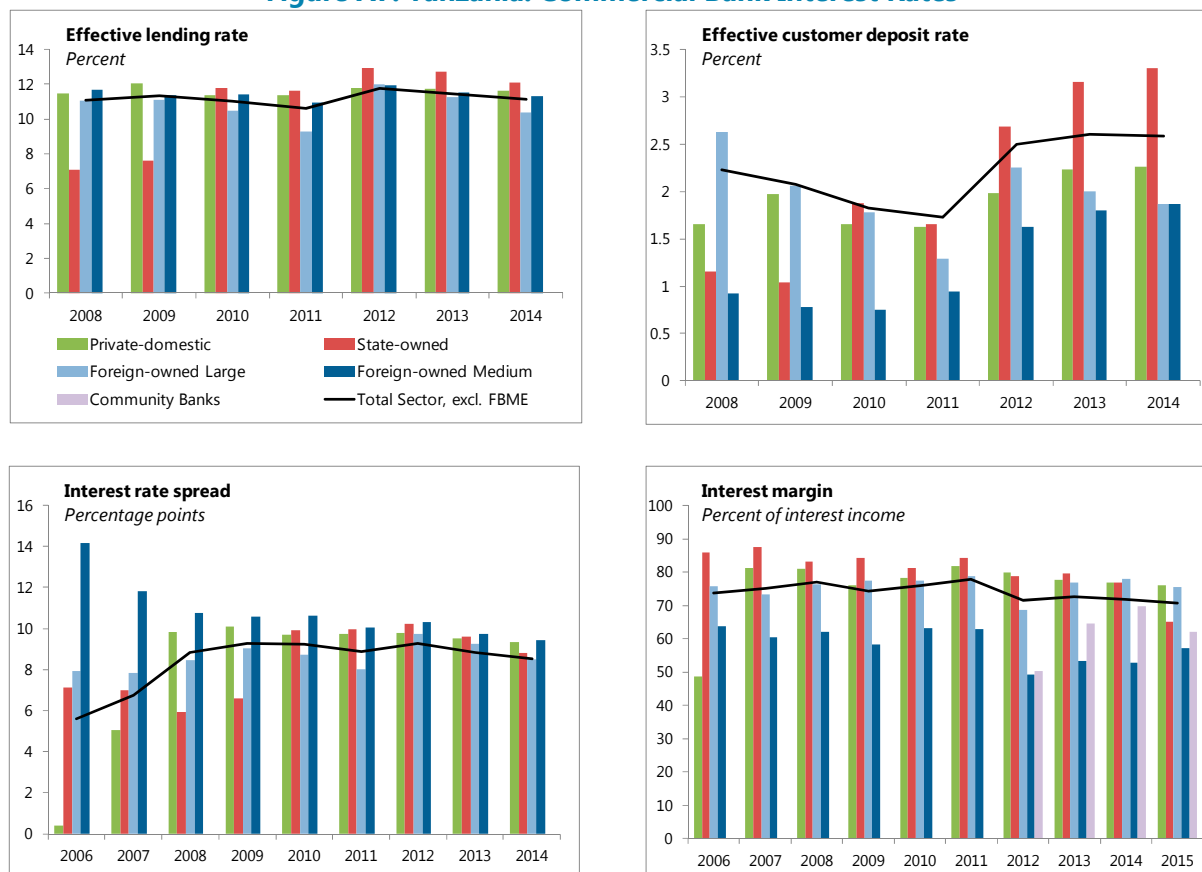


Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

<sup>25</sup> The main driver is the TIB which reports a nominal decline in non-performing loans combined with a large expansion in outstanding loans. The decline in non-performing loans was partly due to a regulatory change for investment banks that introduced more lenient treatment of bad loans.

**While relatively sticky over long periods, lending rates have increased somewhat in recent years; together with increasing deposit rates, this has led to lower interest margins.** The effective lending rate, calculated by comparing the interest earnings to the average loan portfolio, declined from 2012—2014 driven mainly by large foreign-owned banks and state-owned banks (Figure A7). In contrast, the effective interest rate paid on deposits increased from 2011—2014 across all segments of banks. The effective deposit rate remains highest in state-owned banks. The net effect has been a marginal decrease in both the interest rate spread and the interest rate margin.

**Figure A7. Tanzania: Commercial Bank Interest Rates**



Source: IMF staff estimates based on financial statements published by commercial banks. Unconsolidated aggregate data presented for bank group segments. Data exclude FBME (a predominantly offshore bank), TADB and operations in subsidiaries abroad by CRDB and EXIM Bank.

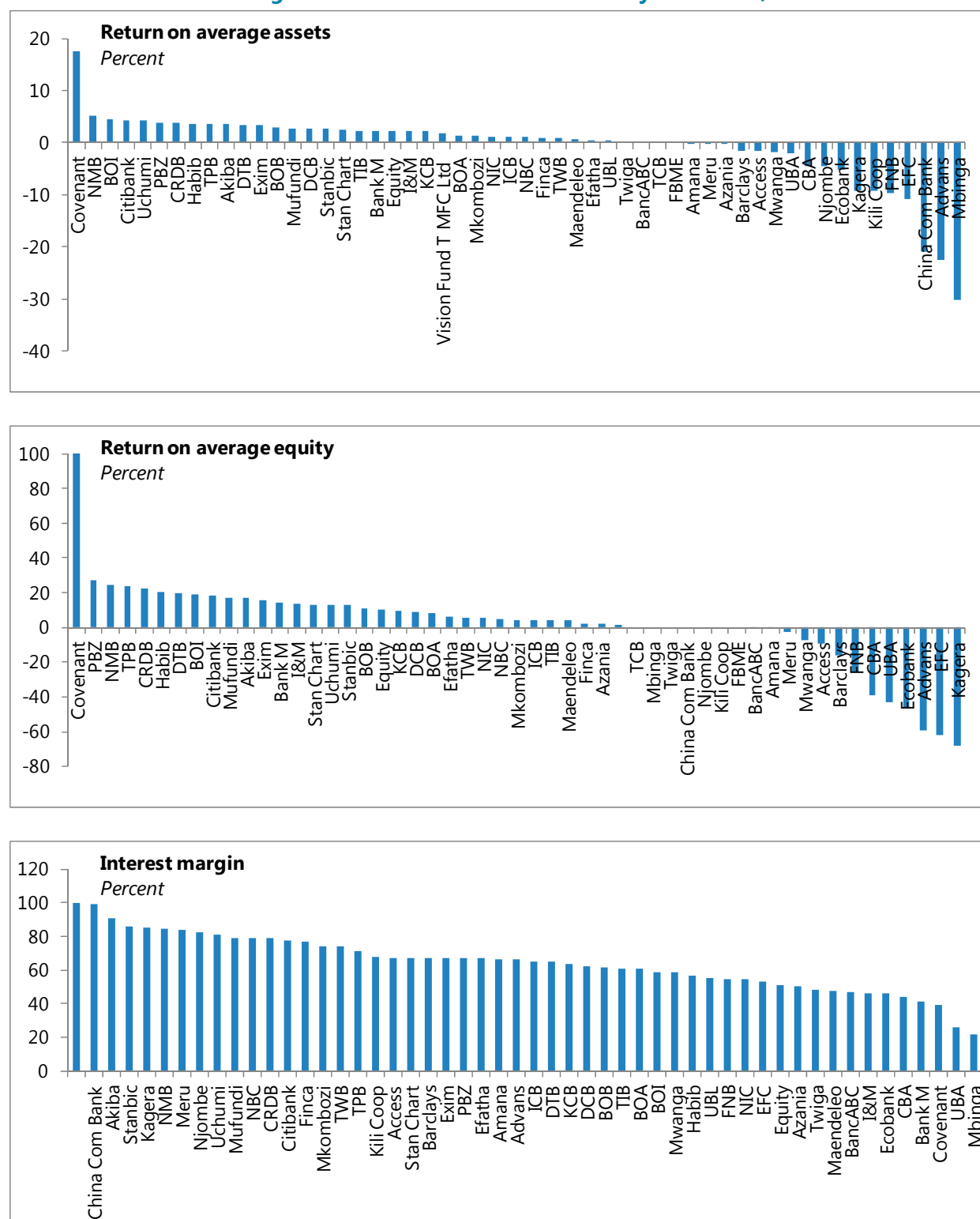
**Market concentration has declined in recent years although the market share of the two largest banks remains high.** Across the main balance sheet categories (assets, liabilities, loans and deposits), the market share held by [CRDB and NMB] is relatively stable at between 35-40 percent (Figure A8). However, the market shares held by the 5 to 10 largest banks have declined in recent years.

**Figure A8. Tanzania: Market Concentration in the Banking System**

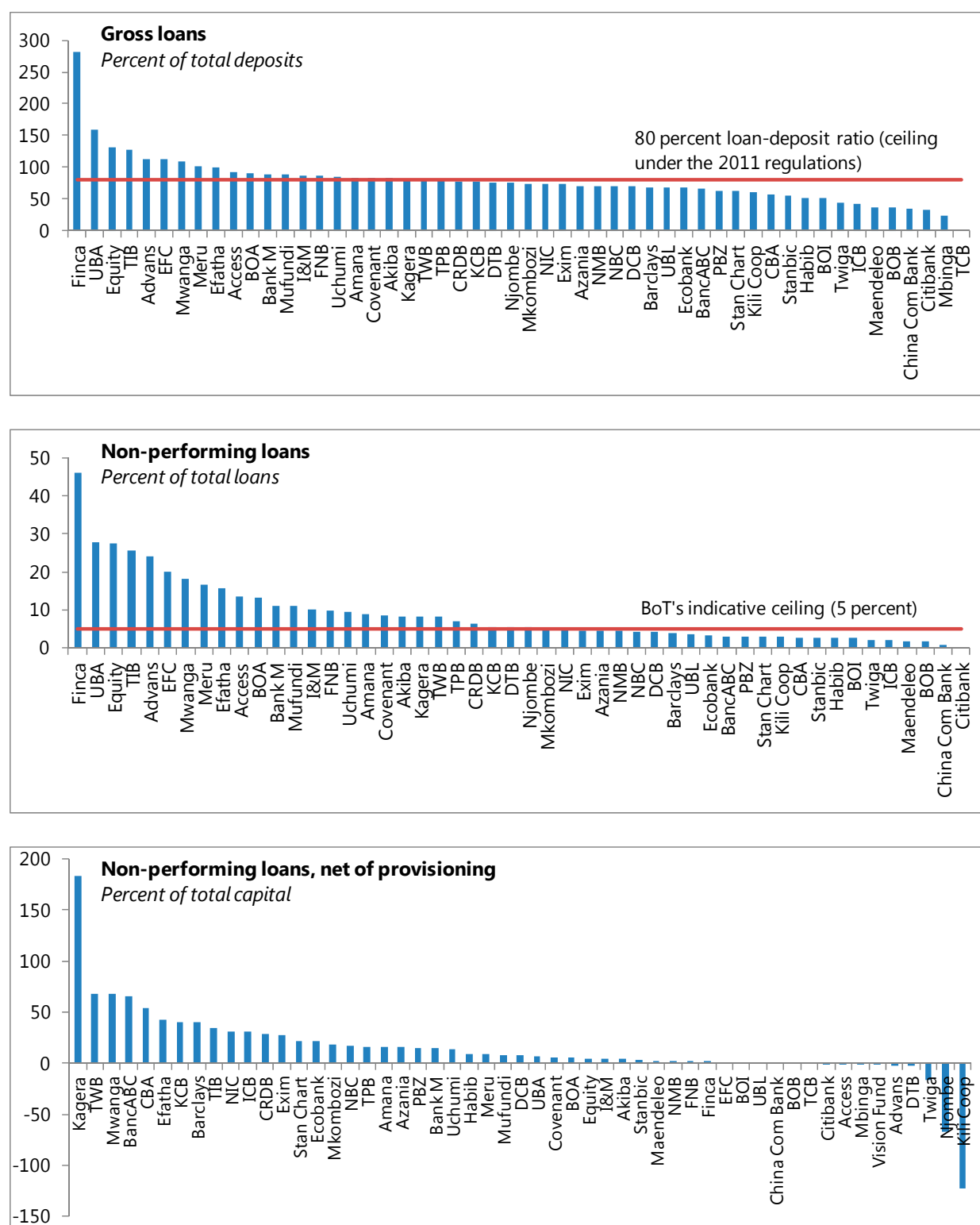
Source: IMF staff estimates based on financial statements published by commercial banks. The data exclude FBME Bank and TADB.

**In addition to differences between the main categories of banks, there is also diversity within these categories** (Figures A9-A10). There is significant variance in terms of profitability across banks, with a handful reporting large losses (Figure A9). The latter contains both medium-sized foreign-owned banks and community banks. While most banks have relatively strong capital to asset ratios a few banks report negative capital, although this could reflect problems with the reported data. Some banks have very high non-performing loan ratios including a number of the state-owned banks (Figure A10). Some foreign-owned banks have relatively high NPL ratios A number of banks exceeded the previously specified [80-percent prudential limit on the loans-to-deposit ratio].<sup>26</sup>

<sup>26</sup> This ceiling, which was specified under the 2008 liquidity management regulations issued by the BoT, has since been abolished under the revised regulations issued in 2014.

**Figure A9. Tanzania: Bank Profitability Indicators, 2015**

Source: IMF staff estimates based on financial statements published by commercial banks. Data exclude FBME (a predominantly offshore bank), TADB, and operations in subsidiaries abroad by CRDB and EXIM Bank.

**Figure A10. Tanzania: Loan Portfolio Indicators, end-2015**

Source: IMF staff estimates based on financial statements published by commercial banks. Data exclude FBME (a predominantly offshore bank), TADB, and operations in subsidiaries abroad by CRDB and EXIM Bank.

Table A1. Licensed Banks in Tanzania

	Total assets, end-2015		Total capital In TSh millions	Size	Date licensed	Ownership
	In Tsh millions	In percent of total				
I. Domestically-owned banks	12,686,981	40.9%	1,729,992			
CRDB	5,327,637	17.2%	682,458	Large	2-Oct-96	78.5% Private Domestic and 21.5% Foreign
NATIONAL MICROFINANCE BANK PLC	4,593,021	14.8%	665,906	Large	27-Sep-05	35% Foreign, 30% Government and 35% Private Domestic
EXIM BANK TANZANIA LTD	1,118,153	3.6%	187,674	Large	20-May-96	40% Foreign and 60% Private Domestic
BANK M (T) LTD	861,345	2.8%	83,084	Large	1-Sep-07	100% Private Domestic
AZANIA BANK LTD	332,438	1.1%	36,951	Medium	24-Jun-04	100% Private Domestic
DAR ES SALAAM COMMUNITY BANK PLC	172,408	0.6%	35,802	Small	1-Aug-02	74% Local Govt and 26.% Private Domestic
AMANA BANK LIMITED	170,664	0.6%	16,396	Small	6-Dec-11	100% Private Domestic
MKOMBOZI COMMERCIAL BANK LTD	111,315	0.4%	21,721	Small	28-Aug-09	100% Private Domestic
II. Majority foreign-owned banks	16,406,803	52.9%	1,976,802			
FBME BANK LTD	4,432,804	14.3%	276,364	Large	5-Jan-06	100% Foreign
NBC BANK LTD	1,694,249	5.5%	255,962	Large	23-Oct-00	70% Foreign and 30% Government
STANDARD CHARTERED BANK (T) LTD	1,615,697	5.2%	219,680	Large	Aug-93	100% Foreign
STANBIC BANK (T) LTD	1,244,569	4.0%	148,181	Large	31-Dec-96	100% Foreign
DIAMOND TRUST BANK (T) LTD	900,438	2.9%	125,327	Large	Jul-97	65% Foreign and 35% Private Domestic
CITIBANK (T) LTD	874,245	2.8%	139,702	Large	8-May-95	100% Foreign
BARCLAYS BANK (T) LTD	711,259	2.3%	65,061	Large	11-Oct-00	100% Foreign
BANK OF AFRICA (T) LTD	575,340	1.9%	68,319	Medium	Nov-94	100% Foreign
COMMERCIAL BANK OF AFRICA LTD	472,617	1.5%	47,807	Medium	16-Apr-02	100% Foreign
EQUITY BANK (T) LIMITED	440,444	1.4%	55,572	Medium	1-Feb-12	100% Foreign
KCB BANK (T) LTD	422,284	1.4%	61,720	Medium	Sep-97	100% Foreign
I & M BANK TANZANIA LTD	382,674	1.2%	51,552	Medium	16-Apr-02	95% Foreign and 5% Private Domestic
AFRICAN BANKING CORPORATION (T) LTD	372,174	1.2%	51,658	Medium	16-Apr-02	80.90% Foreign and 19.10% Government
ECOBANK TANZANIA LTD	360,417	1.2%	27,918	Medium	2-Feb-10	100% Foreign
FIRST NATIONAL BANK TANZANIA LIMITED	275,432	0.9%	124,428	Medium	22-Jul-11	100% Foreign
HABIB AFRICAN BANK LTD	235,822	0.8%	28,547	Medium	3-Nov-97	100% Foreign
ACCESS BANK (T) LTD	215,418	0.7%	26,055	Medium	1-Sep-08	100% Foreign
BANK OF BARODA (T) LTD	196,179	0.6%	32,778	Medium	7-Oct-04	100% Foreign
NIC BANK TANZANIA LTD	191,156	0.6%	29,815	Medium	12-Feb-04	80.41% Foreign and 19.59% Private Domestic
AFRICAN BANK FOR AFRICA	184,408	0.6%	14,213	Medium	22-Apr-09	100% Foreign
AKIBA COMMERCIAL BANK LTD	163,139	0.5%	23,881	Medium	17-Jan-97	54.67 Foreign and 45.33% Private Local
INTERNATIONAL COMMERCIAL BANK (T) LT	138,680	0.4%	21,640	Medium	10-Feb-98	100% Foreign
BANK OF INDIA (T) LTD	129,195	0.4%	21,102	Medium	25-Jun-07	100% Foreign
UBL TANZANIA LIMITED	104,767	0.3%	22,398	Small	13-Mar-13	100% Foreign
ADVANS BANK TANZANIA LIMITED	27,666	0.1%	15,803	Small	22-Jul-11	100% Foreign
CHINA COMMERCIAL BANK	23,067	0.1%	19,203	Small	Mar-15	100% Foreign
EFC TANZANIA M.F.C LIMITED	22,663	0.1%	2,116	Small	22-Jul-11	98% Foreign and 2% Private Domestic
III. State-owned banks	1,764,003	5.7%	298,501			
TANZANIA INVESTMENT BANK LTD	815,235	2.6%	222,053	Large	18-Jan-94	100% Government
PEOPLES' BANK OF ZANZIBAR LTD	469,860	1.5%	43,919	Medium	31-Mar-03	100% Government
TANZANIA POSTAL BANK LTD	370,291	1.2%	40,208	Medium	17-Oct-93	89.5% Government and 10.5% Private Domestic
TWIGA BANCORP LTD	75,591	0.2%	-13,464	Medium	16-Apr-04	100% Government
TANZANIA WOMENS BANK LTD	33,026	0.1%	5,785	Small	27-Jul-09	97% Government and 3% Private Domestic
TANZANIA AGRICULTURAL DEVELOPMENT BANK LTD (TADB)		0.0%			11-Aug-15	100% Government
IV. Community banks	162,104	0.5%	17,307			
MAENDELEO BANK PLC	55,030	0.2%	4,296	Small	Sep-13	100% Private Domestic
UCHUMI COMMERCIAL BANK LTD	24,027	0.1%	5,875	Small	19-Sep-05	100% Private Domestic
COVENANT BANK FOR WOMEN LTD	18,716	0.1%	3,916	Small	Sep-12	100% Private Domestic
MUFINDI COMMUNITY BANK LTD	18,286	0.1%	3,496	Small	11-May-99	100% Private Domestic
MWANGA RURAL COMMUNITY BANK LTD	13,968	0.0%	1,477	Small	20-Sep-00	100% Private Domestic
EFATHA BANK LTD	7,958	0.0%	738	Small	17-Aug-09	100% Private Domestic
KILIMANJARO COOPERATIVE BANK LTD	7,092	0.0%	-525	Small	14-Aug-95	100% Private Domestic
NJOMBE COMMUNITY BANK LTD	5,661	0.0%	-216	Small	8-Nov-10	40% Local Govt and 60% Private Domestic
KAGERA FARMERS COOPERATIVE BANK LTD	4,503	0.0%	413	Small	1-Aug-02	100% Private Domestic
MERU COMMUNITY BANK LIMITED	4,198	0.0%	429	Small	16-Nov-11	100% Private Domestic
MBINGA COMMUNITY BANK LTD	2,156	0.0%	-2,592	Small	29-Apr-03	5.34% Local Govt and 94.66% Private Domestic
TANDAHIMBA COMMUNITY BANK LTD	508	0.0%	0	Small	1-Dec-05	54% Local Govt and 46% Private Domestic

## Annex II. Model and Data Used to Assess Interest Rate Pass-through Coefficients

### Model

Market-to-retail pass-through can be explained using the cost-of-funds approach (De Bondt, 2002), which applies a standard marginal cost pricing model to financial markets. The underlying theory is that money market rates reflect marginal or opportunity costs of funds because banks rely on them for short-term borrowing. They also represent opportunity cost of deposits for households and enterprises given the alternative possibility of investing in money markets or short-term government securities. The pricing of banks' retail products will also include a premium for maturity and risk transformation involved in their activities. The theory implies a positive relationship between market rates and retail lending and deposit rates, which can be formalized in the following markup pricing model:

$$i^R = \alpha + \beta \cdot i^M \quad (1)$$

where  $i^R$  and  $i^M$  are retail (or longer term) and market rates (or shorter term) respectively;  $\beta$  is a long-run pass-through coefficient, and  $\alpha$  is a markup. If markets are perfect (full information and perfect competition) and banks risk-neutral,  $\beta$  would equal 1, implying complete pass-through or a unit interest rate elasticity of demand for deposits and loans (Coricelli, Egert, and McDonald, 2006). Empirical studies, however, suggest that in practice, pass-through is usually incomplete with  $\beta < 1$ , and varies widely by countries and markets.

Equation (1) represents the long-run equilibrium relationship. The out-of-equilibrium adjustment can be described by the error-correction process:

$$\Delta i_t^R = \mu + \rho(i_{t-1}^R - \alpha - \beta i_{t-1}^M) + \gamma \Delta i_t^M + \varepsilon \quad (2)$$

where  $\rho$  measures the speed of adjustment, and  $\gamma$  is a short-run pass-through coefficient. Equation (2) can be further expanded with more short-run dynamics to arrive at the following autoregressive distributed lag form:

$$\Delta i_t^R = \mu + \rho(i_{t-1}^R - \alpha - \beta i_{t-1}^M) + \sum_{k=0}^n \gamma_k \Delta i_{t-k}^M + \sum_{k=1}^n \delta_k \Delta i_{t-k}^R + \varepsilon$$

or by substituting  $\Delta i_t = i_t - i_{t-1}$  and grouping similar terms,

$$i_t^R = \theta + \sum_{k=0}^n \beta_k i_{t-k}^M + \sum_{k=1}^n \alpha_k i_{t-k}^R + \varepsilon \quad (3)$$

In this equation,  $\beta_k$ 's are short-run interaction elasticities, while  $\alpha_k$ 's reflect persistence of retail interest rates. By estimating equation (3), the long-run interest rate pass-through coefficient can be calculated as

$$\beta = (\sum_{k=0}^n \beta_k) / (1 - \sum_{k=1}^n \alpha_k) \quad (4)$$

The mark-up pricing relationship between market and retail rates implies that  $\beta$  should be positive. It also requires that the following conditions be satisfied (Weth, 2002):

$$\sum_{k=0}^n \beta_k > 0 \quad (5)$$

that is, the cumulative impact of contemporary and lagged market rates on retail rates is positive; and

$$\sum_{k=1}^n \alpha_k < 1 \quad (6)$$

which is a stability condition implying convergence of retail interest rates.

### **Data and variables**

Equation (3) was estimated for two stages of transmission for Tanzania, and for comparison purposes also for Uganda, Kenya, Rwanda and South Africa. Stage 1 is pass-through from overnight interbank rates to 3 month treasury bills rates, and stage 2 is pass-through from Tbills to lending rates. Monthly series cover January 2007 – November 2015 or as available. IB denotes overnight interbank rate, TB90 denotes 3-months treasury bill rates, and IL denotes lending rates in domestic currency. Data were obtained from country teams' data, central bank websites, and Haver (for South Africa).

All variables were log-differenced to smooth out time series and remove unit roots. Equation (3) was then estimated individually for each country with two-month lags ( $n=2$ ). In this representation dependent rates respond to independent rates in the same period ( $k=0$ ) or with a lag ( $k=1, 2$ ). The first statistically significant  $\beta_k$  ( $k = 0,1,2$ ) was used as a short-term pass-through coefficient. Long-run  $\beta$  coefficients were obtained using equation (4). Whenever conditions (5) and (6) were not met, the regression goodness of fit  $R^2 < 0.1$ , and all short-run coefficients  $\beta_k$  were statistically insignificant, the pass-through was assumed to be zero.



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