NATIONAL BANK OF RWANDA
BANKI NKURU Y'U RWANDA
BNR

THE RWANDAN BANKER

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Thoughts on Financial Inclusion and Financial Stability

The National Bank of Rwanda's Macroprudential Supervision

Towards A Strong & Resilient Agriculture Sector in Rwanda

Cryptocurrencies and distributed ledger technology

A RESILIENT FINANCIAL SECTOR AND A REBOUNDING ECONOMIC PERFORMANCE

VISION & MISSION

Vision

To become a World-Class Central Bank

Mission

To ensure price stability and a sound financial system

CORE VALUES

Integrity

We uphold high moral, ethical and professional standards for our people, systems and data

Accountability

We are result-focused and transparent, and we reward according to performance

Mutual- respect and Team-work

We keep ourselves in high spirit, committed to each other for success

Excellence

We passionately strive to deliver quality services in a timely and cost effective manner.

We continuously seek improvement by encouraging new ideas and welcome feedback that adds value to customer services

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EDITORIAL TEAM

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In 2017, Rwanda's financial sector grappled with a challenge of an increase in the levels of non-performing loans, which reached 8.2% in June 2017, past the benchmark level of 5%. This put a strain on banks as well as borrowers who failed to meet their debt obligations. The Rwandan Banker team met with the Governor of the National Bank of Rwanda, to discuss the issue of non-performing loans and other developments in the financial sector.

Q&A

Q: What caused the increase in non-performing loans in 2017?

Since 2010, Rwanda continued to achieve high economic growth which averaged at 7.3% between 2010 and 2015. This impressive economic performance motivated banks to expand their loan books by increasing lending to the private sector, which increased by 17.3% on average, in the same period. Outstanding credit grew from Frw 506.3 Billion in 2011 to Frw 1269.6 Billion in 2016.The increase in non-performing loans in 2017 stemmed from;

(i) The slowdown in economic performance observed in 2016 (5.9pc) and the first quarter of 2017 (1.7pc), relative to the previous trend, led to the increase in non-performing loans, as a section of borrowers struggled to service their loans. It is important to note however, that growth started to pick up in Q2 2017 increasing to 4.0 per cent and to 8 per cent in Q3 2017.

(ii) Poor planning and management of large projects by borrowers, where people sought loans for projects without proper prior planning and risk analysis. This resulted in a number of unsuccessful projects and failure by borrowers to service debt.

(iii) Loan diversion by borrowers, where people would use the disbursed loans to do different activities than the funded projects.

(iv) Unwillingness of some borrowers to pay loans and use of legal process to avoid loan repayment and block collateral realization process

(v) Weak credit analysis, administration and monitoring of some projects by banks. In some cases, lenders did not thoroughly understand financed projects, properly analyze projected cashflows, timely perfect securities or closely monitor financed projects.

Q: What could be some of the consequences to Rwanda's financial sector if the increase in non-performing loans persisted?

If the increase in non-performing loans persisted, the financial sector's profitability and efficiency would be negatively affected. It would also put a strain on banks' capital, reduce the appetite of banks to lend and negatively impact economic performance of the country. It is important to note however that although the level of non-performing loans increased to 8.2 per cent in June 2017, this has been decreasing, thanks to a rebounding economic performance observed in the second half of 2017 and efforts by banks to recover some of the loans. Bank provisioning for loans following the increase in non-performing loans has also helped keep the financial sector resilient. In September 2017, the level of non-performing loans had decreased to 7.7 per cent and to 7.6 per cent in December 2017.

With high economic performance expected in 2018, there will likely be opportunities for banks to fund healthy projects and increase loan underwriting. The measures put in place by banks with the support of the National Bank of Rwanda to reduce the risks of an increase in non-performing loans should also continue to promote the resilience of the financial sector.

Q: The National Bank of Rwanda has previously noted that there is lack of adequate monitoring of some large loan facilities, what could be done to address the situation?

There has indeed been a lack of monitoring large loan facilities by banks as well as inadequate project appraisal prior to disbursing loans. The National Bank of Rwanda however, has and continues to engage banks and other financial institutions to develop strict frameworks and policies, for loan assessment and monitoring. Adhering to these stringent policies will help banks to thoroughly conduct risk assessment of borrowers and project appraisal before any loan disbursement but also help them to successfully monitor the projects. This would as a result reduce the likelihood of loan defaults.

Q: The overall ratio of non-performing loans in microfinance was 12.3 per cent as of June 2017, almost double the 7.5 per cent recorded for the same period in the previous year, what could be the main issue affecting the micro-finance sector?

Agriculture is the biggest component of the loan portfolio of many microfinance institutions relative to commercial banks. For example, as of December 2016, loans to the agriculture sector by microfinance institutions represented15% of total Microfinance Institutions' loans compared to 1.6% in the banking sector.

The shocks to the agriculture sector due to bad weather conditions in 2016 and at the start of 2017 therefore affected performance of the agriculture sector, increasing non-performing loans in the sector to 18.2 per cent in June 2017 from 16.9 per cent in June 2016. This reduced the ability of borrowers within the agriculture sector to pay back, which largely affected portfolios of microfinance institutions.

Q: Does the bank have plans for further interventions and support to the financial sector to combat the increase of NPLs? What approaches are under consideration?

The National Bank of Rwanda in its mandate is tasked with financial stability. We are therefore always working to support the financial sector and mitigate any challenges that could hamper the progress of the sector.

In light of the increase in non-performing loans, we have engaged financial institutions to strengthen their internal credit policies and develop monitoring and assessment frameworks. Credit risk is one of the key discussion points during the quarterly prudential meetings with banks and Microfinance Institutions (MFIs) and affects the institution's ranking by the Central Bank.

The revised Corporate Governance regulation also seeks to hold Boards of Directors of banks and MFIs accountable for the overall performance and management of risk, including credit risk, of supervised entities. The implementation of the regulation requiring general provisions on performing loans will enable banks build up sufficient buffers to absorb losses in the event that loans eventually become non-performing, thereby supporting their stability and soundness.

In addition, the Credit Reference Bureau was established in order to remove information asymmetry between lenders. Lenders are required to consult the Bureau before granting loans in order to establish the credit worthiness of the borrower. Going forward, improving the operational efficiency of the Bureau with regard to timely and accurate update of information will also improve the management of NPLs.

Extending coverage and expanding the number of subscriber institutions that provide a broad spectrum of information such as insurance claims history and utility bills will enhance the quality of information provided by the Bureau and also enable the management or minimization of non-performing loans.

The National Bank of Rwanda will also launch financial education campaigns to sensitize the public about developing a culture of honoring loan repayments, loan management and financial services in general.

Q: Going forward, what would you say to people considering applying for loans as well as financial institutions?

I would challenge anyone planning to apply for a loan, especially those looking for funds to support projects, to ensure that prior to making loan applications, they conduct thorough market and risk analysis of the projects. Where a borrower is applying for large sums of funding and, are unable to carry out project planning and analysis on their own, it is imperative that they seek professional support to help them understand the processes.

I would also urge banks to ensure that they conduct project appraisal before any decisions to issue loans can be made, they carry out strict due diligence of borrowers' creditworthiness and set up stringent procedures for close monitoring and supervision of projects.

It is however important to note that, although there was an increase in non-performing loans in 2017, the financial sector remained and continues to be resilient. The sector remains well capitalized and can absorb any shocks that may arise. Going forward it is important that we continue to work together as players and partners in the financial sector, to ensure stability and good performance of the sector.

Among the issues that Rwanda's financial sector faced in 2017 was the increase in non-performing loans. The Banker spoke with Maurice Toroitich, the Chairman of Rwanda Bankers Association, to seek his opinions on the subject.

Maurice Toroitich
Chairman Rwanda Bankers Association

Non-performing loans ratio as of June 2017 stood at 8.2 percent while an ideal level as per the regulator is 5 percent. From a banker's perspective, what caused the gradual increase?

Over the past years, banks in Rwanda have lent money to businesses in certain sectors of the economy that have recently come under strain due to local and global macro-economic factors and reorientation of government fiscal policy towards bridging a hitherto widening balance of payments position.

These sectors include construction, mining and hotels. Due to the nature of the businesses in these sectors, loan exposures tend to be large and so when a few of these fall in arrears, they affect not just individual banks, but the banking sector in general.

The central bank has previously pointed to lack of adequate monitoring of some large loan facilities, which could be a fault amongst banks, is this the case?

While poor monitoring by banks is one of the reasons that some loans may have fallen into arrears, I generally hold the view that no amount of monitoring can forestall a loan that was bad from the beginning. In addition to inadequate monitoring,I believe that banks in the quest for growth and profitability have been rather aggressive in lending to the private sector including to some fairly marginal businesses with no capacity to withstand adverse market changes.

In banking jargon, we call this a high appetite for risk. When times are good economically, any business can pay loans but

> *I therefore believe that business owners must not take short cuts in running a business*

it's only those businesses that have a solid cashflow base and professional management that can withstand tough times. Secondly, many businesses in our market rely on bank debt for growth.

This raises the sustainability risk because in hard times, businesses will still be required to repay their loans unlike equity which can wait for better times to receive dividends.

To some financial experts, the cause of the growing non-performing loans is to some extent attributed to inadequate skills sets among a section of banks' staff. What do you have to say about this?

As alluded to earlier, I hold the view that a loan that is bad from the beginning will go bad anyway. It therefore means that credit risk assessors in banks have to have the right skills and tools to understand the customer's business (present and likely future trends) and relate it to the request for a loan.

We have many staff in the sector who know how to read financial statements and cashflow statements, but it takes a highly skilled staff to make the right judgements about whether the business that is being assessed requires any credit and what type of credit. It takes an equally skilled staff member to advise the customer about other ways of solving the problem they have which may not usually be more loans. This is a special skill that is not abundant in our market.

The Rwanda Bankers Association and member banks have been investing large sums of money on training programmes to impart the required technical skills but it will take additional time and energy to mentor and supervise staff to build their unique competencies in credit risk assessment.

What are local banks doing to change the state of affairs and prevent further deterioration in NPLs registered?

It is within the discretion of banks to exercise higher levels of prudence in lending to minimize the risk of admitting marginal business proposals for large credit. However, this may sometimes be seen by the public in negative light that banks are unwilling to lend money especially to the more riskier sectors of the economy e.g agriculture production.

In the case of loans that have already been granted and have gone into NPL, Banks usually work with their affected customers to find solutions (short and long term) to the problems that their customers have. Each business is unique and requires different actions which individual banks and their customers can determine given the specific business circumstances of a customer.

Such actions may usually include debt restructuring, non-debt capital raising, etc. There is no specific set of solutions that can solve all NPL problems equally because of the uniqueness of customer's businesses and the status of economic sectors that they operate in.

Among the sectors mostly prone to non-performing loans are manufacturing, hotel industry and retail trade. What can be done to ensure that the sectors do not fall out of favour by bankers eventually?

While it is true that there are certain sectors of the economy that have come under stain in recent times, it is also true that in each of these sectors, there are champions that continue to do well despite a generally depressed economic environment. In most cases, these are businesses that are managed professionally and have their own risk management practices that helps to sustain their businesses and in turn continue to repay their loans.

I would think that banks will continue to lend to these champions even in hard times. The challenge is how to get many more businesses calibrated in the format of the champions so that there is sustainability and ability to wade through tough times.

More often than not, the bad economic times pass and it's only those businesses that remain afloat during bad times that are able to take advantage of new growth opportunities when they arise.

I therefore believe that business owners must not take short cuts in running a business as such short cuts may seem profitable initially but not sustainable in the long run. Banks and other actors (Financial advisors) should also play a role in enabling business owners to appreciate their business dynamics in particular those that have not yet arisen so that they are better prepared to tackle the challenges when they happen.

Local banks are set to adopt the new international financial reporting standard (IFRS 9), which is aimed at improving the accounting and reporting of financial assets and liabilities, enabling banks to reduce non-performing loans. Do you envision that this could serve to reduce non-performing loans?

First of all, it is important to clarify that IFRS 9 is not intended to help banks to reduce non-performing loans. It is meant to ensure that banks begin to recognize the impact of non-performing loans very early in the life cycle of a loan as opposed to the current standard which requires that loan impairment is taken only when a loss incident has occurred.

Under IFRS 9, there needn't be a loss incident for a bank to recognize a portion of a loan as uncollectible depending of the nature of the loan, economic circumstances and portfolio performance history. However, because of the heavy capital consequence of entertaining low-quality loans, banks are likely to adopt much higher levels of prudence to minimize occurrence of substandard loans in their books.
In this sense, NPLs in the banking sector are likely to decrease over time, but most likely at the expense of more liberal lending to business.

Any recommendations on policy actions that could reduce the vulnerability of some sectors with regards to their ability to pay back loans?

It is generally very difficult to envision policy actions to avert vulnerability of any businesses in any sector to economic down turns which are the precursors of NPLS.

Except in certain sectors like in agriculture and mining where government can still play a big role in formalization of the business value chain in these sectors to give assurance to product off-takers and lenders, the only other policy interventions to avert financial malpractice and mismanagement is institution of strict governance standards across certain key sectors like agriculture and mining to ensure market confidence and predictability.

What support by the central bank to local banks could serve to avoid the situation from further deteriorating?

In the first instance, BNR can play a role in disseminating industry information about portfolio performance trends of loans in key economic sectors so as to inform banks considering lending to such sectors to exercise greater caution or to expand credit.

Secondly, BNR can also play a role in advocating for changes in laws that affect business reorganizations and restructuring to bring about greater flexibility and efficiency in executing foreclosures. Many times, banks lose lots of money due to thebureaucratic process of executing foreclosures hence delays in concluding debt recovery processes.

> *In this sense, NPLs in the banking sector are likely to decrease over time, but most likely at the expense of more liberal lending to business.*

Prof. Thomas Kigabo

Thoughts on Financial Inclusion and Financial Stability from BNR's Chief Economist

Does financial inclusion pose risks for financial stability?

Financial inclusion and financial stability are high on the global policy makers' agenda today. Policy makers are strengthening efforts to advance financial inclusion and at the same time developing frameworks of ensuring financial stability. Some argue that it is practically impossible to pursue financial inclusion policies and at the same time maintain financial stability.

They point to the subprime mortgage crisis in the United States, where the rapid increase in financial inclusion in credit, impaired financial stability, because much of the subprime lending was given to borrowers who were not creditworthy and to some who could not handle credit responsibly. Others however argue that achieving financial inclusion helps in ensuring financial stability. For example, in a financially inclusive country, the financial sector would successfully mobilise savings domestically, helping to cushion any negative externalities for relying on foreign capital to finance the economy, such capital outflows in times of downturns.

This debate is particularly relevant for central bankers, who are at the intersection of promoting financial stability but also ensuring that they create a conducive policy environment to support financial inclusion. Are financial inclusion and financial stability mutually exclusive? Does pursuing financial inclusion pose risks for financial stability? These are questions policy makers are exploring.

There has been significant growth in the banking sector in terms of financial viability, profitability and competitiveness across different countries. In Africa for example, the last decade saw profound structural changes in financial systems, characterized by financial deepening and rapid growth in intermediation. The expansion of mobile money services across different African countries was a key factor that has contributed to increasing financial inclusion.

Financial inclusion has been a welcome trend in many countries, because access to financial services facilitates day-to-day living, helps families and businesses plan for everything from long-term goals to unexpected emergencies. A financially inclusive population are more likely to use other financial services, such as credit and insurance, to start and expand businesses, invest in education or health, manage risk, and weather financial shocks, which can improve the overall quality of their lives, boost employment opportunities and support economic activity.

Financial inclusion is essential in improving the efficiency of the process of intermediation between savings and investments

Financial inclusion could lead to high savings and a wider deposit base for banks and other financial institutions, contributing to inclusive growth and stability of financial sector.On the other hand, financial inclusion may create incentives for banks to rapidly increase lending, with less strict due diligence procedures. This could as a result increase lending to less creditworthy clients, thus boosting default risks and creating financial instability, as evidenced during the subprime mortgage crisis in the US.

FINANCIAL INCLUSION AS A KEY FACTOR FOR FINANCIAL STABILITY

Financial inclusion is essential in improving the efficiency of the process of intermediation between savings and investments. A financial intermediary obtains funds from savers and uses these savings to make loans to a sector in need of finance; therefore, in a country with a high level of financial inclusion, there is a large portion of funds flowing into through the financial system.

Therefore, by performing its main task of channeling funds from sectors that have a surplus to sectors that have shortage of funds, the financial sector contributes to reduce information and transaction costs, and to facilitate the trading, diversification, and management of risks. This contributes to a more resilient economy, a key factor for financial stability.

The 2008 global financial crisis demonstrated that low-income savers and borrowers tend to maintain steady financial behavior through the business cycle both in terms of deposit keeping and borrowing, which contributes to enhancing the soundness and resilience of financial institutions, during downturns.

Thus, extension of financial services and products to small customers provide bigger opportunities to garner stable deposits, which are necessary for the stability of the financial sector. Furthermore, efforts to increase access to formal banking and financial services promotes innovative solutions, which have the potential to reduce costs and thereby contribute to increasing the overall efficiency of the economy and financial stability.

Although there have been concerns that increasing financial inclusion may pose risks for financial stability, there is not enough evidence that these risks are enormously systemic in nature. Financial inclusion and financial stability should therefore co-exist, in an environment with adequate regulatory and prudential tools, greater financial awareness and literacy and with more effective customer protection practices.

It is important that when countries are developing strategies to increase financial inclusion, they also create a facilitative regulatory and supervisory system, to ensure that the formal financial system delivers affordable financial services to a large population, without compromising the acceptable levels of safety and soundness of the sector. An effective consumer protection, policy framework is also a critical component of any regulatory environment, which aims at meeting the goal of financial inclusion while promoting the soundness and resilience of the financial system.

THE NATIONAL BANK OF RWANDA'S MACROPRUDENTIAL SUPERVISION

By: Financial Stability Monitoring and Policy Division

The National Bank of Rwanda (BNR) is responsible for promoting and safeguarding the financial stability of Rwanda. It does so by seeking to promote strong financial institutions through its role as the prudential supervisor of banks, microfinance institutions, insurance companies and pension funds; and by ensuring robust and efficient financial infrastructure including payments.

In exercising its prudential responsibilities, BNR has close regard to the work of global standard setting bodies such as the Basel Committee on Banking Supervision (BCBS), Finacial Stability Board (FSB), International Association of Insurance Supervisors (IAIS), etc.

In fulfilling its financial stability mandate, BNR seeks to identify and mitigate systemic risks. These are the macro-economic and financial risks which have the potential to threaten the financial system as a whole, with serious consequences for the Rwandan economy.

To assist in this task, BNR has developed a set of indicators and tools to motitor and measure the build-up of potential risks and vulnerabilities in Rwandan financial sector.

Every quarter, the BNR's Financial Stability Committee meets to discuss developemnts in the financial sector, assess potential risks to the sector, and deliberate on key measures to mitigate those risks.

The overarching objective of BNR's macroprudential policy is to preserve financial stability through the early identification and mitigation of systemic risks. This is a challenging task since "systemic risks" are difficult to define and quantify in practice. They most obviously exist, for example, in the shape of a broad-based breakdown in the functioning of the financial system, potentially including a large number of financial institution failures.

However, an effective policy framework must function pre-emptively, so that systemic risks are addressed and mitigated before crystallizing in a way that damages the financial system and the real economy.

Accordingly, an effective macroprudential policy framework is predicated on the establishment of an early warning system.In conducting its financial stability analysis, the BNR seeks to identify the sources of systemic risk and also the macro-financial linkages through which risks are transmitted and amplified. These linkages include:

• Cross sector linkages between

the balance sheets of the financial sector and those of the households and corporates. In the case of households, these financial linkages are being progressively strengthened and intensified in Rwanda by the Government's National Financial Inclusion Plan which seeks to ensure access to finance by at least 90 percent of the population by 2020. The whole idea is about the level of household and business leverage. Overleveraged household and coprporate sectors is indicative of financial sector flagilities.

• Cross-institution linkages between bank and non-bank financial intermediaries. In Rwanda, these linkages are less complex than found in far larger financial systems where banks may be just one part of large financial conglomerates.

To assist in this task, BNR has developed a set of indicators and tools to motitor and measure the build-up of potential risks and vulnerabilities in Rwandan financial sector

However, important linkages still exist in Rwanda through ownership arrangements between banks and insurance companies. Linkages are also generated by the placements of deposits in banks by pension funds, insurance companies and MFIs.

• Cross-border linkages between Rwanda and the rest of the world. The extent and source of capital flows can sometimes be volatile and have systemic consequences. In this respect the BNR monitors the source of funds used by the financial sector. In Rwanda, this risk is minimal as banks rely on deposits funds at the tune of over 80 percent. Nevertheless, in the spirit of financial stability monitoring, the BNR monitors the extent and growth of cross-border lines of credits.

These macro-economic and financial inter-linkages give rise to systemic risks across two dimensions which the BNR monitors: time and cross sectional dimension risks.

The time dimension of systemic risk relates to the way in which aggregate risk changes through the course of an economic cycle. In particular, there is perceived to be a procyclical bias, with financial institutions inclined to take on more risk in the upswing of an economic cycle only to become overly risk-averse in a downswing.

This characteristic amplifies the boom and bust cycle in the supply of credit and liquidity and, by extension, in asset prices. In Rwanda, these swings in sentiment are sometimes quite abrupt reflecting swings in commodity prices and natural disasters such as drought.

The cross-sectional or structural dimension of systemic risk arises from common exposures and interconnectedness within the financial system. These relationships work to magnify and rapidly transmit shocks between financial institutions. As a result, the failure of one institution, particularly a large one, has the potential to threaten the system as a whole.

The relatively small size of the Rwandan economy also significantly increases the concentration risk of the banking sector on both the funding and lending side of the balance sheet.

Monitoring and assessing the degree of systemic risk across both dimensions is a challenging task. As a starting point, the BNR focuses on a number of key indicators to help capture the source and monitor the buildup of risks. These indicators are a subset of the comprehensive financial soundness indicators (FSIs) compiled by the BNR as part of its broader financial stability surveillance function.

SYSTEMIC RISK INDICATORS: THE TIME DIMENSION

There is plenty of evidence that strong credit growth often precedes a financial crisis. But

Much of this work has taken place under the auspices of the BCBS. Refer, for example, to BCBS 2011 "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems" Revised Version not all credit booms end this way. So, a key question for the BNR in times of strong credit growth is to assess whether this growth is healthy and supportive of stable economic expansion, or whether some of it might be judged "excessive" i.e. of such poor credit quality that it increases the probability of default by borrowers and hence the likelihood of a financial crisis.

International studies have shown that simple changes in private sector credit-to-GDP ratios and/or in the credit-to-GDP gap (the gap between the ratio and its estimated long run trend) can be leading indicators of financial stress in banks. And in the case of the credit-to-GDP gap, considerable efforts have been made by central banks in other countries to identify thresholds which might signal the need for a policy response. BNR regularly compiles and monitors estimates of the credit-to-GDP ratios and the credit-to-GDP gap.

The BNR does regular assessment of credit growth in seeking to better understand the outlook for financial stability in Rwanda. Whenever credit is growing strongly, for example, the BNR undertakes a forensic analysis of disaggregated loan data to identify which sectors and industries are borrowing – how much, why and at what price.

The qualitative information drawn from the BNR's Bank Lending Survey is also used to analyze changes to lending standards and credit conditions. Regular meetings between BNR and financial institutions to assess their views on credit conditions are also helpful. Ultimately, the BNR seeks to fully understand the reasons behind any expansion in credit; and conversely, the explanations for any slowing or contraction.

Leverage in non-financial sector balance sheets amplifies the dangers of excessive credit growth.For that reason, the analysis of household and corporate sector balance sheets plays a key role in BNR's financial stability framework. The aim of this sectoral analysis is to track the indebtedness of the household and corporates and assess their debt-servicing capacity.

BNR recently commenced a survey of large corporate borrowers in Rwanda to better understand trends and developments in corporate sector balance sheets.

Developments in real estate markets are monitored closely by the BNR.There is ample evidence that a sharp run-up in the price of property—commercial and residential—especially when combined with a rapid expansion in credit – can easily turn into a price correction with damaging consequences for financial stability. On a quarterly basis, the BNR undertakes the real estate price survey and monitors developments in the real estate prices.

Liquidity risks are closely monitored by BNR.Strong credit growth can some times be associated with increased reliance on short-term and volatile sources of funding, including inter-bank borrowings – sources which can rapidly evaporate on signs of stress.

This in turn can trigger an abrupt deleveraging or fire-sales of assets with system-wide consequences. The BNR monitors liquidity positions of financial institutions, the sources and maturity of funds used by lending institutions to invest.

SYSTEMIC RISK INDICATORS: THE STRUCTURAL DIMENSION

Excessive exposure concentrations make large parts of the financial system vulnerable to

The qualitative information drawn from the BNR's Bank Lending Survey is also used to analyze changes to lending standards and credit conditions

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common shocks. Direct concentration risks arise from large exposures to specific sectors (e.g. real estate and trade).

They are direct in the sense that a shock to a particular sector would affect all banks that have a large portifilio investment in that sector. Indirect concentration risks arise when a shock weakens banks through their interconnectedness with other parts of the financial system, rather than any fragilities on their own balance sheets.

To measure risks associated with concentration, the BNR monitors the level and growth of sectoral loans and the quality loans in highly financed sectors.

Below are other analytical tools used by BNR to map interconnectedness and concentration risks within Rwanda's financial system.

• Network Analysis:BNR harnesses the information available from banks' large exposure returns to identify net inter-bank exposures and to map the potential losses should one or more of them fail. This analysis is extended to common exposures on both the funding and lending sides of banks' balance sheets.

An effective macroprudential policy framework is also built on a collegiate and collaborative relationship with other relevant financial authorities

• Analysis of systemically important banks (SIBs):These are banks of such a size, market importance, or inter-connectedness that their distress or failure would cause significant dislocation in the financial system and adverse economic consequences. The BNR has drawn on the framework developed by the BCBS to identify its systemically important banks (D-SIBs).

• Stress-testing of the banking sector. Systemic risk indicators generally provide information about the level of risk that is, at best, a current snapshot of the system. In order to provide a more-forward looking assessment, the BNR undertakes regular scenario analysis and stress testing.

This provides an indication of the banking sector's resilience, in terms of solvency and liquidity, in response to plausible, adverse outcomes. By varying the default rates and loss-on-default rates, for example, BNR may be able to highlight the credit risk associated with concentrated lending to particular sectors of the economy.

KEY OBJECTIVES OF BNR'S MACROPRUDENTIAL POLICY

To be effective, a macroprudential policy framework must address systemic risks across both dimensions through the timely application of appropriate policy instruments. While the ultimate objective of is to promote financial stability, BNR has intermediate objectives. These objectives are defined as the prevention and mitigation of systemic risks associated:

• Excessive credit growth and borrowing. Excessive or unhealthy credit growth, which ultimately presents as a higher rate of defaults, particularly by highly leveraged borrowers, has been identified as a key driver of financial crises in many countries;

• Liquidity and funding risks. Reliance on short-term and unstable funding may lead to fire sales, market illiquidity, and contagion;

• Direct and indirect exposure concentrations. Exposure concentrations make a financial system vulnerable to common shocks, either directly through balance sheet effects or indirectly through asset fire sales and contagion; and For each of these key objectives, the BNR has identified indicators to help monitor the associated risks and also the macro-prudential policy instruments available for prevention and mitigation purposes.

BCBS, A Framework for Dealing with Domestic Systemically Important Banks; October 2012.

Key Financial Stability Indicators

KEY OBJECTIVES	INDICATORS
Excessive Credit Growth and Leverage	
Aggregate	Credit growth Credit-to-GDP gap Growth in credit-to-GDP
Households	Growth in household credit Debt-to-income Lending standards
Non-financial corporates	Growth in corporate credit (total) Growth in corporate credit (sector) Debt service ratio Lending standards
Financial sector	Bank capital ratios Bank leverage ratios Solvency ratio for the insurance sector The funding position of the pension fund
Real Estate	Growth in real estate lending House price growth Commercial property price growth
Liquidity and Funding Risks	Loan-to-deposit ratio Share of non-deposit funding Liquid asset ratio Share of foreign currency funding
Direct and Indirect Exposure Concentrations	Exposure of banking sector to different sectors
D-SIBS	Size Interconnectedness Substitutability Complexity

DECISION TAKING

The BNR's mandate for macroprudential policy derives from the Law Governing the National Bank of Rwanda. The law directs the central bank to ensure a "sound financial system" and assigns operational responsibility for this mission to the FSC. The FSC is mandated to review and ensure the soundness and stability of the financial system. The FSC meets at least quarterly to review the financial stability outlook in Rwanda and to consider the use of policy measures to prevent and mitigate systemic risks.

An effective macroprudential policy framework is also built on a collegiate and collaborative relationship with other relevant financial authorities. In Rwanda, this relationship has been formalized by the establishment of the National Financial Stability Co-ordination Committee which is chaired by the Minister of Finance and includes the BNR Governor and the CEO of the Rwandan Capital Markets Authority (CMA). This provides an opportunity for the BNR to formally brief the MOF and the CMA on the outlook for financial stability and, where appropriate, to seek their assistance in supporting the BNR's macroprudential policy objectives.

TRANSPARENCY AND ACCOUNTABILITY.

The BNR attaches great importance to transparency and accountability for macroprudential policy actions. It publishes an annual Financial Stability Report (FSR) and a bi-annual Monetary Policy and Financial Stability Statement. A Press Release is also available following each meeting of the FSC. The aim is to convey financial stability assessments clearly, link them logically to any policy action and to manage public expectations about what can be achieved by those policies.

Law No. 48/2017 of 23/09/2017 Law Governing National Bank of Rwanda.

DEVELOPING STOCK MARKETS IN AFRICA

Stock markets are an important part of financial services and play a key role in economic growth of countries. Stock markets help to facilitate long-term capital mobilization, provide alternative investment opportunities, solicit foreign capital inflows and serve as an indicator of the overall macroeconomic performance.

Although many African countries today recognize the importance of stock markets and are working to develop financial services, stock markets are still underdeveloped, relative to other regions across the world.

In Africa today, there are 27 stock exchanges and three commodities exchanges established in the continent. Many of these exchanges are largely illiquid with very low trading activity. Stocks and bonds remain the common products available in all African stock markets.

Challenges such as political instability in some African economies, macroeconomic uncertainty in others, limited domestic investor base, underdeveloped trading and settlement structures, and lack of market information are largely hindering the development of stock markets.

For these markets to develop, it is essential that countries design strategies to create an environment that allows growth and development of stock markets.

Countries with presence of stock exchanges should look to automation, regional integration, demutualization and attracting retail and institutional investors. There is also need for tax incentives, easy accounting standards, relaxed listing requirements, modified disclosure obligations and moderate deposit requirements for investors.

Designing financial market regulatory frameworks would also help to create certainty, thus attracting foreign capital inflows and encouraging foreign participation in local markets.

The regulatory framework should also be designed in a way that favors stock market related businesses thrive. For example, many active brokerage firms tend to be headquartered in different countries than those they operate in, because licensing, listing fees, and other requirements to operate domestically are complex to navigate, thus creating barriers for new local market players. Regulations that support the growth of these businesses would therefore be key.

Some of these strategies have proved effective and Rwanda is a case in point.

The Rwanda Stock Exchange (RSE) was demutualized at its creation. This had an impact on investors' participation registering a growth of 61.7% from 2011. This also led to regional integration which as a result, boosted dual listing on the market. Currently, regional companies represent 57.1% of the listed companies on the Rwanda Stock Exchange.

As a continent, Africa still has a long way to go in order to achieve strong and sound stock markets. As the continent strives for economic transformation, supporting financial market growth especially stock markets should be a priority.

It may seem a very difficult task at hand, but implementing a few strategies as discussed earlier may be the way to start.

CRYPTOCURRENCIES AND DISTRIBUTED LEDGER TECHNOLOGY

Samuel Baker is an Economist in Monetary Policy and Research at the National Bank of Rwanda

On 5th December 2017, my article on Bitcoin was published in the New Times, in which I explained that although the world's largest private cryptocurrency has recently achieved lucrative valuations, it is unlikely to be a good avenue for good financial returns, which many hoped it was. Below is the original version of the article.

BITCOIN HAS THE GLITTER BUT IT IS NOT GOLD

From Wall Street, to the streets of Kigali, Bitcoin has recently been a term on most people's mind. The cryptocurrency, once pronounced a fraud, is now taking on the world by storm.

The popularity of Bitcoin has come following the lucrative valuations it achieved, surpassing gold, the most regarded expensive asset. Developments like the recent announcement by the Chicago Mercantile Exchange (CME) Group to launch Bitcoin Futures have also helped to create a positive buzz for Bitcoin.

Bitcoin has re-energised the debate around cryptocurrencies that were once an area of technology reserved for financial technologists and speculators pushing libertarian philosophies.

The increasing significance of cryptocurrencies in the global economy is also attracting the attention of regulators globally, who seem to have been caught by surprise. Some argue that cryptocurrencies will be transformative while others believe they spell disaster.

By: Samauel Baker

For people looking to make quick financial returns however, Bitcoin looks a plausible option. But, is it?

Bitcoin has been trading at record highs, and its price has dramatically increased in the past months. At the time of writing, this piece, Bitcoin had risen past a record of $11,000 from around $8000 in the past two weeks; since October alone it has seen a price increase of more than 50 percent and has risen more than 700% in 2017. With these lucrative valuations, individuals across the world and in Rwanda are joining the bandwagon to invest in Bitcoin.

It is, however, important to note that much of what is driving Bitcoin's price is speculation and that their price is the most volatile. Any change in sentiment on Bitcoin may therefore lead to a huge drop in Bitcoin prices, thus depleting the value we are seeing today. This volatility was evident on November 8 where over four days, the price of Bitcoin slumped by more than 25%, before bouncing back on 13th November.

Investor enthusiasm for Bitcoin is at a fever pitch, which has parabolically pushed up the price of a single Bitcoin. Much of this enthusiasm is driven by expectations that the cryptocurrency will gain wider acceptance and use in the global economy.

However, it is worth going back to the basics of what Bitcoin as well as other cryptocurrencies really are. Most cryptocurrencies like Bitcoin are denominated in their own units of value and do not have intrinsic value but instead depend upon user perceptions of value. They are also not tied to a sovereign currency and are therefore not a liability of any person or institution.

Their value is based solely on users' expectations that they can exchange these units for something else of value, such as goods and services, or sovereign currencies at a later date. These expectations can change greatly, and introduce greater volatility and risk of loss in the value of the units than is typically observed.

The adoption of Bitcoin or any other cryptocurrency as a global currency is suspect; partly because of regulatory reasons and partly because, creating a world currency from scratch, especially given the mandatory limitations on bitcoin creation, is no mean feat.

The dollar is today's reserve currency and accounts for roughly two-thirds of all financial and economic transactions globally. The daily value of foreign exchange trading tops $5 trillion, alone, while bitcoin does a mere fraction of that. Bitcoin also fails as money because convertibility is suspect in some nations where bitcoin exchanges have been banned; which creates some confusion as to how the currency can be used.
The widespread use of Bitcoin is also unlikely because of the risks it poses for sovereign regulatory bodies. Traditionally, Central Banks have long been the guardians of official money. Money depends on the authority of the state for credibility, with Central Banks managing its price and/or quantity. Countries still have the need to maintain control of their respective currencies and money supplies.

As such, the emergence of Bitcoin is seen as a threat to financial stability and monetary authority since governments have less control over it, if Bitcoin or other cryptocurrencies become widely used, this could render monetary policy obsolete.

This will therefore force many Central Banks across the world to ban the use of Bitcoin, limiting its use.

Bitcoin as well as other cryptocurrencies are widely used in the dark web for a wide range of illicit activities, from money laundering and tax evasion to drug dealing, prostitution and circumventing government controls, among others. In China for example, authorities issued a ban on private cryptocurrencies because they were being used to circumvent capital controls. These reasons will continue to limit the widespread use of Bitcoin, which therefore undermines the basis on which investor enthusiasm for Bitcoin is centered.

"The dollar is today's reserve currency and accounts for roughly two-thirds of all financial and economic transactions globally

The Bitcoin buzz has also led to a proliferation of cryptocurrencies, such as the new launches of other cryptocurrencies on a daily basis, attempts by banks to create their own cryptocurrencies and the increasing creation of Initial Coin Offerings (ICOs) which will limit their respective values and may be a sign of a bubble building.

Bitcoin may be the new poster child for quick financial gains, but it is in a bubble that may soon bust. The ground on which the financial gains it promises are based is shaky and the risks for those engaging in these schemes are far greater.

As the old saying goes, not all that glitters is gold. Bitcoin undoubtedly has the glitter, for now, but it is definitely not gold.

THE COMMENTS

The comments to the article were testament oh how the cryptocurrency craze is well and live in Rwanda.

'Cryptocurrencies…is the next big thing and sooner or later central banks have to revise their own policies to adapt to this new currency' one comment read;

'Hate or love Venezuela, but yesterday they made a bold move to introduce cryptocurrency in oil trade…, but those who understand cryptocurrency and its development, the future is bright' claimed another.

Many of the comments to the article shared a common ground; assumptions that (i) all cryptocurrency is Bitcoin; and (ii) that anyone calling Bitcoin a bubble was opposed to innovation. These assumptions do not hold, and in this piece, I would like to provide an extended view on the subject.

WHAT IS A CRYPTOCURRENCY?

A cryptocurrency is a digital or virtual currency/money that uses cryptography, a process of changing legible information into a code, making it impossible to track any transfers or purchases. Cryptocurrencies use blockchain technology or distributed ledger technology (DLT) which allows users to make secure payments and store money without the need to use their name or go to a bank.

Usually, electronic representations of money, such as bank deposits, are exchanged via centralized infrastructures, where a trusted intermediary clears and settles transactions, but no such centralized infrastructures or intermediaries exist in cryptocurrencies.

They differ from normal/fiat currency in three ways: cryptocurrencies are electronic not physical; are not the liability of anyone, they are issued and usually controlled by its developers not the usual Central Banks; and feature peer-to-peer exchange, exchanged between payer and payee.

The first cryptocurrency to garner public attention was Bitcoin, launched in 2009 by an anonymous group or individual using the pseudonym Satoshi Nakamoto. In September 2015, there were over 14.6 million bitcoins in circulation commanding a total market value of $3.4 billion. Currently,at the time of writing, the dollar value of 20 biggest cryptocurrencies is around $150 billion according to Bloomberg, and there are more than 900 cryptocurrencies available.

HOW ARE CRYPTOCURRENCIES CREATED?

Units of cryptocurrency can be created by anyone through a process called mining. This involves using computer power to solve complicated maths problems that generate coins. Users can also buy the currencies from brokers online, then store and spend them using cryptographic wallets. The most common cryptocurrencies are: Bitcoin, Ethereum, Ripple and Litecoin:

In China for example, authorities issued a ban on private cryptocurrencies because they were being used to circumvent capital controls

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HOW COULD CRYPTOCURRENCIES EVOLVE?

The biggest innovation of Bitcoin is not Bitcoin but the Distributed Ledger Technology (DLT) or blockchain; the underlying technology that supports Bitcoin and many other cryptocurrencies.

The systems, rely on networks of computers, rather than a central authority like a bank, to verify and record transactions on a shared, virtually incorruptible database. DLT therefore allows peer-to-peertransactions, which removes the need to conduct transactions via centralized infrastructures, where a trusted intermediary is required for clearing and settlement.

Government bankers across the world believe this has the potential to replace cash and make other payment systems more efficient. DLT also has significant implications for traditional financial services.

In the previous article, I argued that Bitcoin fails as both a currency and an asset since it has no intrinsic value, is not tied to a sovereign currency and is therefore not a liability of any person or institution.

I also noted that due to the risks it poses to financial stability and monetary authority, central banks across the world may be forced to ban the use of Bitcoin, limiting its use and therefore putting an end to the expectation that Bitcoin will become widely used, an expectation that has fueled the increase in Bitcoin prices.

This was evident in January, when the news that countries like China and South Korea were increasingly clamping down on cryptocurrencies set stage for bad news that reversed Bitcoin’s price gains.

Banning Bitcoin or other similar cryptocurrencies however, does not mean an end of cryptocurrency or the technology they use. For example, in order to counter the risks posed by private cryptocurrencies, central banks around the world are exploring whether issuing their own would help. The People’s Bank of China has conducted trials of its prototype crypto currency albeit issuing a ban on Bitcoin exchanges and ICOs.

The Bank of Japan, the Bank of England and the European Central Bank are also considering the possible use of DLT, while the Dutch Central Bank has created its own cryptocurrency-for internal circulation, according to Bloomberg. Both the central banks of Canada and Singapore demonstrated prototype distributed-ledger-based wholesale payment systems that handle clearing and settling simultaneously, via a cryptocurrency token.

Some Economists in recent years have argued that a cryptocurrency tied to central-bank-backed money could give governments a way to issue digital tokens that are a lot like cash.

Users would enjoy the level of

anonymity that Bitcoin provides, while being protected against the volatility that has plagued cryptocurrencies.

Debates of whether such a cryptocurrency would be retail (ie. Issued to individuals) or wholesale (ie. Issued to banks) are ongoing.

Central-bank-backed cryptocurrencies would however be bad news for privately issued cryptocurrencies such as Bitcoin, given that Bitcoin was created in efforts to render banks and other third parties in transactions, obsolete.

With their own virtual currencies, central banks would command authority in the cryptocurrency space, undermine expectations for a widespread

> ***A cryptocurrency is a digital or virtual currency/money that uses cryptography, a process of changing legible information into a code, making it impossible to track any transfers or purchases.***

use of Bitcoin and other private cryptocurrencies and squash hopes of private cryptocurrencies (like Bitcoin) everbecoming acceptable currency.

Central bank virtual currencies would also give authorities ground to ban the use of privately issued cryptocurrencies, since such would regarded as counterfeit.

A CRYPTOCURRENCY REVOLUTION?

Bitcoin prices may have enjoyed massive price increases, but Bitcoin remains anunsustainable investment scheme that people should be cautious about.

As is currently evident, much of the price gains recorded in December have been wiped out. As the graph below shows for example, by February 2018, Bitcoin had lost more than half of its value since 18 December 2017.

Cryptocurrencies on the other hand may evolve differently than is commonly perceived. For example, if the risks posed privately issued cryptocurrencies like Bitcoin continue to grow, central banks may join the game and issue their own central bank backed cryptocurrencies supported by the Distributed Ledger Technology, thus reclaiming their space!

A cryptocurrency revolution, if any, may therefore not be a Bitcoin revolution and DLT may instead win the battle.

Central Banks mayturn out to be leaders of this revolution, instead of private players.

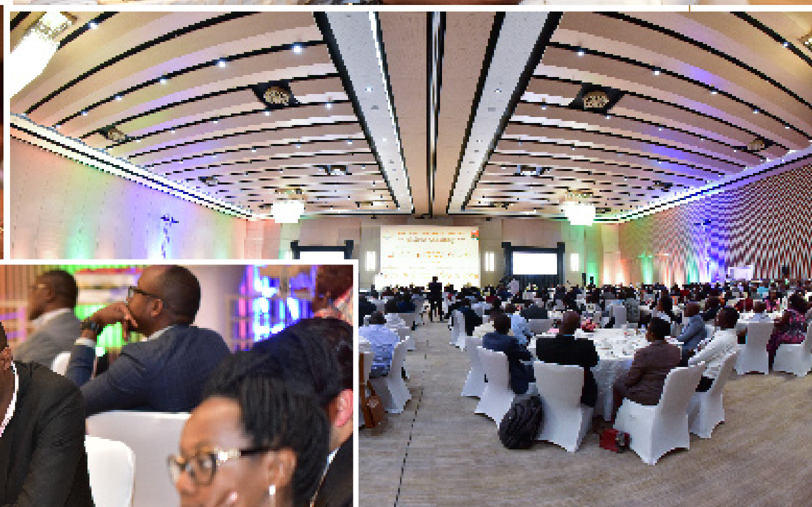
Bitcoin has made headlines but the distributed ledger technology seems to be taking the throne.

The Electronic Payment Awareness Campaign in pictures










Why Electronic Payments Matter?

Electronic payments matter because they are not just convenient, but play an important role in stimulating economic growth. The rapid proliferation of electronic payments, in particular credit, debit and prepaid cards is changing how consumers pay for goods and services, how merchants manage their businesses and how governments make and collect all sorts of payments. All of this reduces friction in the overall economy, leads to increased spending on goods and services, which in turn, creates a virtuous economic cycle whereby increased consumption translates into increased production, more jobs, higher incomes and greater economic prosperity.

Electronic payments provide consumers with convenient, less costly and secure access to their funds, reduce cash and check handling for merchants, and expand the pool of customers who are guaranteed to pay.

Electronic payments such as mobile money, help customers to instantly send payments from their mobile phones instead of traveling an hour or more to distant bank branches.

Cash is data-less, which means that cash payments for, say, water, don't establish a history for someone who reliably pays for water. The good credit history that would show in a user's electronic payments however, would enable a bank to make better lending decisions, which multiply the effect of its investments.

Electronic payments matter for the government because, the less cash is transacted, the more people are pulled into the formal, taxpaying economy and the more transparent services become. A paperless system should cut delays and corruption, the increased documentation and transparency help to increase tax receipts.

On average, central banks spend around $ 2 billion when printing bank notes. The life span of a note in Rwanda is around 4 months (against an average of 8 months with a higher level of cashless). Adopting electronic payments in Rwanda will reduce these costs, incurred by the National Bank of Rwanda to print and distribute cash.

Thinking about cash? Cashless is the way to go.

TOWARDS A STRONG AND RESILIENT AGRICULTURE SECTOR IN RWANDA

Article By Jean Bosco Iyacu, Director of Programs, Access to Finance Rwanda, Livingstone Nshemereirwe: Head of Agriculture And Rural Finance, Access to Finance Rwanda and Ayandev Saha, General Manager, K.M. Dastur & Company, London

Agriculture financing

Agriculture is the mainstay of Rwanda's economy and plays an important role in the overall economy. The agriculture sector accounts for a third of the country's GDP (MINECOFIN, 2013; NISR 2015) and close to 70% of working individuals aged 16 years or above are employed in agriculture (EICV 4).

The Government of Rwanda (GoR) has therefore made agricultural development a priority and allocated significant resources to improving productivity, the quality of farm produce, promoting sustainable land management, developing supply chains and value-added activities. The crop and livestock intensification agenda for Rwandan agriculture has been and continues to be critical.

Given limited arable land (which is 52 per cent of the total surface area of the country), yield increases of staple crops and livestock are vital for increasing rural incomes and agricultural growth. Expanding high-value agricultural commodities and reducing post-production losses are also important for increasing exports and foreign exchange, reducing imports, and sustaining higher incomes over the long term.

Most of the farmers in Rwanda remain vulnerable to natural events and disasters. The national risk atlas released in 2015 estimated that Rwanda's main climate change hazards including; drought, landslides, floods, earthquakes and windstorms; can inflict a combined economic loss of $132 million.

Smallholder farmers (two hectares or less) in Rwanda are often subject to weather shocks like drought, erratic and heavy rainfall that impact their farming outputs. It is worth noting that farmers who farm on two hectares or less are among the most adversely affected by weather-related risks in the country. A bad season can result in

the loss of an entire harvest, leaving the farmers indebted and lacking the funds to buy quality seeds to start the next growing season.

Shocks to the agriculture sector are cited as some of the key barriers discouraging banks from providing the much needed financing, to help the sector thrive. For example, according to the National Bank of Rwanda, the banking sector in Rwanda has a much smaller share of their loan portfolios 1-2% in the agriculture sector, which is very low given that agriculture's share of GDP is very large.

In cases where financing is available, it is largely offered by microfinance institutions and tends to be short-term and expensive, precluding longer-term investments.

This informal funding only partially covers the financial needs of farmers and small agribusinesses, and usually at a high cost. Lack of financing as a result leads to limited investment in agriculture by farmers and other investors, which as a result dwindles agricultural productivity. However, long-term agricultural financing is needed for sustainable investments such as better storage facilities, food/commodity processing facilities and equipment/mechanization.

Financial institutions cite that the lack of funding to the agriculture sector is the result of the challenges facing this specific sector, which high risk in agricultural investments relative to potential returns and the duration of investments given supply side shocks, inadequate agribusiness lending skills, poor appraisal and monitoring of debt due to infrastructural gaps and undiversified agricultural portfolio.

DE-RISKING THE AGRICULTURE SECTOR

Financial institutions can extend financing only when they judge the investment to be an attractive avenue for good financial returns. As discussed above, heightened risk within the agriculture sector therefore discourages financial institutions to consider opportunities in this sector. De-risking the sector however, would help to make it attractive for funding from the banking sector.

To de-risk the agriculture sector, it is important to

(i) Design a national agriculture insurance scheme

(ii) Support marketing of agricultural loan products and clients' awareness creation initiatives;

(iii) Enhance the rural outreach capacity to improve the delivery of financial services to the agricultural clients.

(iv) Provide financial education to farmers as well training on governance for agricultural cooperatives

Financial institutions also need to develop agriculture lending specific strategies for each of the institutions; strengthen capacity and skills of staff in the delivery and management of agricultural credit, recruiting; and, refine/strengthen loan products, policies and procedures to match the needs of the clients;

Access to Finance Rwanda has worked with some financial institutions, while implementing the above strategies to help enable the institutions to extend financing to the sector. From the experience, agricultural credit has become an

attractive alternative for the financial institutions, enabling them to provide credit to clients in the agriculture sector. Some of these institutions have grown their agriculture loan portfolio by over 30% while maintaining their agriculture loan portfolio at risk below 2%.

Further, the use of technology such as mobile banking solutions has helped to integrate farmers into better organized value chains thus helping financial institutions to provide and deliver solutions, even in areas with infrastructural gaps, at low cost. For example, Access to Finance Rwanda enabled tea farmers to receive payments on their mobile phones through a digital integration of Tigo Cash and the Core banking system of Tea SACCOs. Over 9,000 farmers received mobile payments.

This eased on their travel time and travel costs. In partnership with AFR, TechnoServe is also implementing the SMS bookkeeping to increase access to sufficient and timely working capital for cooperatives and private wet mills in Rwanda via the SMS Bookkeeping System.

TechnoServe developed the SMS Bookkeeping System to facilitate access to working capital for wet mills by increasing lenders' willingness to lend by reducing loan monitoring costs and improving access to wet mill financial information through a coffee transparency platform.

Over 84 coffee washing stations have been able to access working capital. Over 60,000 farmers in these cooperatives have benefited from this project. Through this platform 8,258,163,137RwF was lend out to 84 coffee washing stations (AFR annual report 2016.

Since climate change poses the biggest risk to the agriculture sector, solutions such as irrigation schemes, drought-resistant technologies, flood controls among others, are required to sustainably de-risk the agriculture sector and cushion it from these inevitable supply shocks.

Managing risk and building resilience in the Agriculture sector through the National Agriculture Insurance Scheme

Although risks in the agriculture sector, insurance mechanisms can help to mitigate the effects of shocks in the sector. Without access to agricultural insurance, farmers are unable to mitigate against agricultural losses and hence are reluctant to invest more in their farm and never make full productive use of their scarce land resources.

Carefully designed and well implemented national agricultural insurance schemes may help soften the inevitable economic blow and economic fluctuation. Insurance can enhance confidence among smallholders in adopting new technologies and practices and confidence among financial institutions in extending necessary credit.

In implementing a national scheme, the economy will be able to move from a culture of providing ad hoc support to farmers in the aftermath of large production shocks ('ex-post') towards a system of pre-planned and budgeted agriculture insurance ('ex-ante'). The national agriculture insurance scheme will ensure

• guaranteed return on producer's investment on the insured crops in the event of failure of any of the notified crop and livestock as a result of natural calamities, pests and diseases

• flow of credit to the agriculture sector and thereby encouraging farmers to adopt innovative and modern agricultural practices

• financiers such as banks, Microfinance Institutions and others are more willing to offer credit and expand their lending portfolio to agriculture sector without increasing default risk

• standard insurance contracts and lay down procedures and principles for the operation of the scheme

This is evidenced by the successes and lessons learnt from countries such as India where 56.29 million farmers are covered under the national agriculture insurance scheme, Prime Minister Fasal Bima Yojana (PMFBY), making India the world's single largest agriculture insurance market.

The Indian government has experimented with a succession of agricultural insurance schemes since 1972. PMFBY provides a comprehensive insurance cover against failure of the crop thus helping in stabilising the income of the farmers.

The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural Crops for which past yield data is available and for which requisite number of Crop Cutting Experiments (CCEs) are being conducted under General Crop Estimation Survey (GCES).

The scheme is compulsory for loanee farmers availing Crop Loan account for notified crops and voluntary for others. The scheme is being administered by the Ministry of Agriculture.

Attempts to introduce crop insurance were made by a few private insurance companies in Rwanda, but these were on a very limited scale. Not much headway could be made due to lack of awareness, infrastructure, technical capacity and lack of adequate data. Experience from other countries has shown that sustainable, large scale agricultural insurance schemes must be based on public-private partnerships. Public-private partnerships (PPP) can create an environment that is more conducive to agricultural insurance. The essential pillars and achievements of this PPP model include:

• public co-financing of premiums and catastrophe losses

• setting insurance enabling uniform terms and conditions

• efficient, transparent and uniform settlement of claims

In a Public Private Partnership (PPP) model, the national scheme can be implemented through a multi-agency framework by selected insurance companies under the overall guidance and control of the single Ministry (namely Ministry of Agriculture and Animal Resources, Ministry of Finance and Economic Planning) or through an Agricultural Insurance Pool / Board duly represented by the relevant Ministries and Institutions directly involved with the Ministry of Agriculture and Animal Resources.

The role of the Government is critical in ensuring that the incentives and broad objectives of the scheme are well aligned with the farmers' real needs and providing an oversight role on the value and appropriateness of the agriculture insurance and risk transfer products.

Roles and Responsibilities of the Government in implementing the national scheme

• Providing broad guidelines for establishing a functional PPP model (lay

down procedures & principles /operational guidelines and modalities for the operation of the national scheme)

• Assisting the Board in the development of short, medium and long-term goals and objectives of agriculture insurance and risk management intervention in the country

• Providing an oversight role on the value and appropriateness of the agriculture insurance and risk transfer products namely;

• Crops to be insured and the risks to be mitigated through insurance

• Insurance coverage levels, sum insured and acreage; and premium subsidy levels

• Conducive environment to support private sector participation

• Take responsibility for identifying insurance products eligible for premium subsidy and appointing suitable insurance companies for underwriting the insurance schemes

• Review and monitor the implementation of the scheme, risk pool strategy and including coverage, premium rates etc.

• Lead the implementation of capacity building for all key stakeholders and contribute to mobilization and awareness raising for farmers

• Lead development and implementation of the yield data collection and management system

The other important pillar in developing the national scheme is the insurance product/ scheme by itself. Identifying and prioritizing risks is an important step in designing a comprehensive national agricultural insurance scheme. With limited budgetary resources, it is crucial that some sort of prioritization takes place to understand the key risks in terms of frequency of occurrence and degree of impact. The set of potential products for crops to select from is essentially composed of four typologies.

These are:

• Named Peril Crop Insurance (NPCI),
• Multiple Peril Crop Insurance (MPCI),

• Weather Index Insurance (WII) and

• Area Yield Index Insurance (AYII)

In Rwandan context, Multi-Peril Crop Insurance can be one of the most suitable products as it covers yield losses due to non- preventable risks, viz. drought, dry spells, flood, pests and diseases, landslides, natural fire and lightening, storm and localized risk like hailstorm.

On the other hand, index-based insurance schemes may not work in areas with high losses due to localized perils, e.g. hail, strong wind, local flooding by river, etc. that only affect small areas or few farmers.

Rwanda experiences many microclimates whereby the weather on one side of a mountain may be sharply different from the other side, leading to very different farming experiences by farmers in close proximity.

Any index insurance schemes also requires accurate historical weather and yield data to estimate the trigger points and historical yield averages.

Basis risk with index insurance arises when indices are imperfectly correlated with farmers' losses. However, in the overall context considering varied crops and multiple locations the four different

contract typologies would not be necessarily alternative solutions and could be rather seen as complementary in providing the customers with a wide range of risk management tools which to select from.

As part of designing national agricultural insurance scheme, Access to Finance Rwanda (AFR) conducted a pre-feasibility assessment, a qualitative demand-side study to gauge the demand for agriculture insurance among farmers in Rwanda and to explore appropriate strategies that would address their needs in dealing with different risks in livestock and crop production.

There were ten focus group discussions amongst farmers practicing eleven different agricultural activities in nine districts and five provinces of Rwanda. More than 80% of the farmers that participated in this study have shown keen interest in the idea of having a national agricultural insurance scheme.

Most of these farmers were willing to join such scheme because of the losses they have experienced in the past and would thus have no reservations in participating in any viable scheme that would guarantee them compensation if they were to ever face such losses again.

Following suggestions were made by the farmers in order to ensure higher participation across crops and regions

• Program should be managed by the Government (MINAGRI) working with local authorities - This will give legitimacy and credibility to the scheme from the onset

• Scheme should be simple to understand and transparent - In past due to basis risk the claim benefit has not been compensated to the extent of the loss; farmers never understood the payout mechanism

• Fiscal Incentive / Premium Subsidy - limited financial capacity (affordability) – increasing costs of agricultural inputs and fluctuation of commodity prices coupled with recurring household expenses leave many farmers especially in rural areas with limited financial capacity to pay the entire risk premium.

• Link insurance to agro-inputs access and service delivery - Famers have strong linkage with agro dealers and they trust someone internally more than outsiders

•Prioritise sensitization and training at village level - it is important for the farmers to understand the functionality of the scheme and product benefits; claims settlement process in particular.

• Policy document & premium receipt to individual farmer in local language - To built transparency and trust amongst the farmers on the overall scheme; encourage retention and attract enrolment

• Prioritise working with cooperatives - More number of farmers can be enrolled; ease of premium collection and monitoring agricultural activities

Based on the findings of the feasibility study, the Ministry of Agriculture and Animal Resources with support from Access to Finance Rwanda will in 2018 start an agriculture insurance pilot phase in few districts this quarter that will inform a national roll out in the subsequent seasons. It is anticipated that this national scheme will help increase the current low penetration of insurance and provide improved risk mitigations to the rural farmers, hence increase their farm productivity and incomes.

A BRIEF OVERVIEW OF RWANDA'S AGRICULTURAL PRODUCTIVITY GAP

Paul Brimble

Paul Brimble is an economist on the ODI Fellowship Scheme at the Rwandan Ministry of Finance and Economic Planning. He works at the Macroeconomic Policy Unit in the Office of the Government Chief Economist

Agriculture is tremendously important for any developing country. While no country has developed through its agricultural sector, it is also true that no country has developed without it. In the majority of countries, there exists an agricultural productivity gap where the value added per worker is much higher in the non-agricultural sector than in the agricultural sector.

This phenomenon has been well documented throughout the past century with these gaps largest amongst developing economics. Recently, an academic paper comparing the size of these gaps across a large cross-section of countries found that using data from the early 2000s, Rwanda had one of the largest gaps in the world. However, over the past couple of decades, Rwanda has undergone a significant economic transformation. How have these changes translated into agricultural productivity?

The objective of this article is to outline a new and simple approach for understanding productivity in Rwanda's agricultural sector. The first step is to establish a measure for the agricultural productivity gap in order to evaluate the size of these gaps and observe how they have changed over time.

By presenting these trends, I provide a clear picture of how the agricultural sector has responded to the economic and political developments of the past 25 years.

The second step is to identify contributing factors that can help to explain the gap. Furthermore, determining the extent of each factor's contribution is essential for understanding the underlying causes of the gap.

The third step is to discuss the interpretation of the gap once the contributing factors have been taken into consideration. Finally, I conclude this article by looking ahead at the future of Rwanda's agricultural sector and laying out the policy implications accompanying the results.

TRENDS IN RWANDA'S AGRICULTURAL PRODUCTIVITY GAP

I model the agricultural productivity gap using a theoretical framework derived from a two-sector neoclassical model where the economy consists of the agricultural and the non-agricultural sectors. Given minimal assumptions on the production technologies and equilibrium conditions, this theory predicts that the ratio of value added per worker should be equalised across sectors due to labour mobility.

This prediction is based on the idea that if the gap is larger than one, agricultural workers would be incentivised to switch out of the agricultural sector, where the value of their marginal product is low, and into the non-agricultural sector, where this value would be higher in order to earn more income.

After time, this structural shift in labour should equalise the marginal product of labour across sectors. This reallocation of workers would increase aggregate production without any additional increase in labour.

I calculate the agricultural productivity gap using national accounts data and so refer to these estimates as the macro APG throughout this article. The estimates are presented in Figure 1, covering a period of 25 years from 1991 to 2015. For the entire sample, the average gap is 8.11, significantly higher than the global average of 3.50.

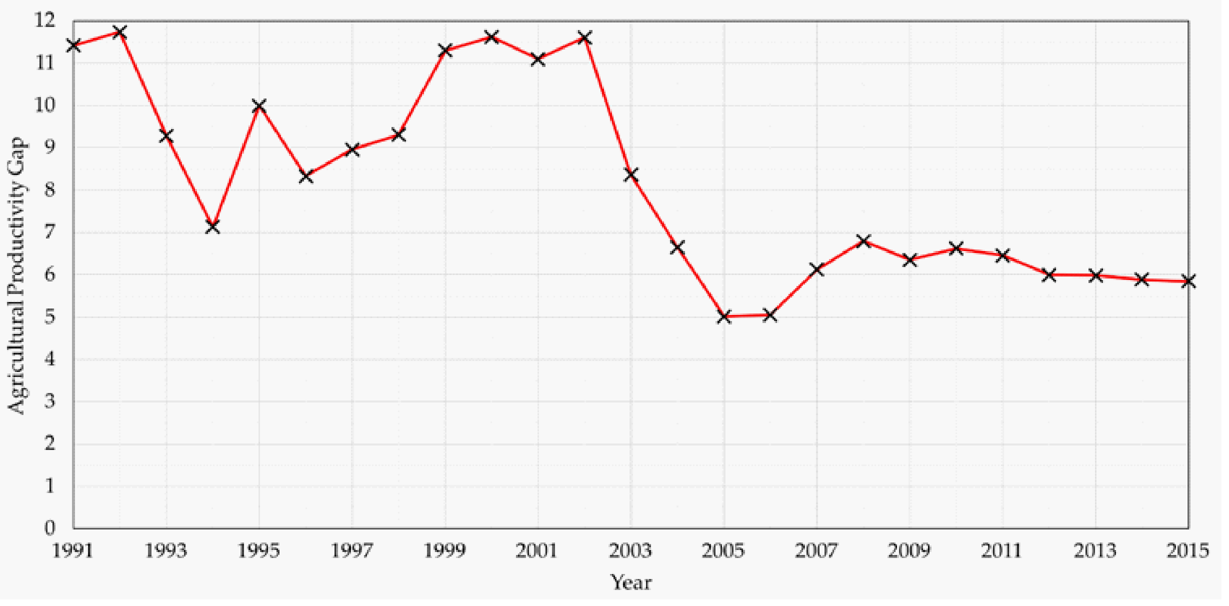
However, Figure 1 clearly shows that there are three distinct stages describing the trends in Rwanda's agricultural productivity gap. Firstly, during the pre-transition stage from 1991 to 2002, the gap is incredibly large and volatile with an average of 10.15.

Secondly, the transition stage from 2002 to 2005 is marked by a steep and permanent decline in the gap from 11.61 to 5.01 over this short time period. Finally, the post-transition stage from 2005 onwards sees the gap stabilise significantly, averaging a much more respectable 6.01 during this decade.

For the entire sample, the average gap is 8.11, significantly higher than the global average of 3.50.

Figure 1

Rwanda's Agricultural Productivity Gap (1991-2015)



These three stages closely correspond to Rwanda's economic and political developments of the past 25 years.

The large and volatile gap during the 1990s unsurprisingly coincide with the highly unstable economic and political landscape of that decade.

It was not until the early 2000s after the country had begun its recovery path that the gap began to improve substantially.

The transition stage can be directly linked to favourable macroeconomic conditions and supportive government policies such as the Vision 2020 strategy which emphasised the importance of developing the agricultural sector away from subsistence farming towards high productivity market-oriented agricultural activities.

While the stability of the gap from 2005 onwards comes as no surprise given Rwanda's strong and robust economic performance, the size of the gap itself remains persistently high.

CONTRIBUTING FACTORS EXPLAINING THE GAP

While the pre-transition and transition stages are easy to comprehend, the post-transition stage is quite puzzling.

Despite Rwanda's impressive growth over the previous decade, it appears that these economic developments have not translated into reducing the gap at all. In this section, I identify the factors responsible for this gap and evaluate the extent of their contribution.

In this article, I distinguish between two types of factors that affect the gap differently.

Firstly, there is potential for mismeasurement of the gap that arises from the use of data at the macro level.

Secondly, the inclusion of hours worked data and human capital estimates can vastly improve measures of labour inputs. By taking into account these data and labour adjustments, I can then calculate an adjusted agricultural productivity gap which describes more accurately the economic situation.

Mismeasurement of the value added and labour employment shares can arise due to a variety of reasons. While in theory, the national accounts data should measure home production, this may not always be the case in practice. As a significant proportion of the agricultural sector involves home production and consumption, national accounts data can potentially underestimate agricultural production.

The relatively large informal sector can also provide additional bias and in combination with under-reported home production can lead to national accounts data omitting large aspects of economic activity.

Furthermore, a large proportion of the economically active population consists of self-employed and unpaid family workers who may be excluded from the labour force, biasing the labour employment shares.

An additional source of mismeasurement might be the inclusion of value added from large multinational organisations which may not be representative of workers and households. Overall, there are multiple sources of potential mismeasurement which can either overestimate or underestimate the agricultural productivity gap.

The use of household surveys can help to evaluate the extent of this mismeasurement. This is because nationally representative surveys include a wide range of workers, including unpaid family contributors as well as enterprises which many not be properly represented in the national accounts data.

In contrast to the macro APG, I refer to the agricultural productivity gap calculated using household surveys as the micro APG. Using data from three Integrated Household Living Conditions Surveys (EICV), I construct measures for value added and labour employment shares for 2006, 2011 and 2014.

The macro and micro APG estimates are presented in Table 1. The differences in these gaps are sizeable with the micro APG estimates consistently lower by a relatively constant proportional factor for all years.

The macro APG average is 5.80 compared to the micro APG average of 4.58 during the three household survey years. As the micro estimates are tackling mismeasurement issues, these results provide significant evidence for mismeasurement which once addressed, reduces the agricultural productivity gaps by a factor of approximately 1.3.

Improving labour input measures can also significantly change the size of the agricultural productivity gap.

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Table 1
Comparisons of Rwanda's Agricultural Productivity Gaps

		Date Adjustments	Labour Adjustments		
Year	Macro APG	Micro APG	Hrs_n / Hrs_a	Hn / Ha	Adjusted APG
2006	5.05	3.93	1.93	1.46	1.40
2011	6.46	5.32	1.82	1.71	1.71
2014	5.88	5.40	1.89	1.71	1.39

Improving labour input measures can also significantly change the size of the agricultural productivity gap. An underlying assumption for the previous analysis is that labour inputs, and consequently workers, are identical across sectors.

More precisely, it is sufficient to compare the number of workers in each sector if they all work the same amount of hours and possess the same skills, measured by their human capital. If there are systematic differences in hours worked and human capital per worker across sectors, then these should be taken into consideration.

The differences in hours worked and human capital can be considered as quantity and quality differences respectively.

By adjusting the labour inputs to include the labour employment share, hours worked and human capital across sectors, I can calculate an adjusted agricultural productivity gap which takes into account these differences. This adjusted gap is equal to the unadjusted gap divided by the ratio in hours worked and human capital across sectors. Using the EICV household surveys, I calculate the ratios of both hours worked and human capital across sectors for 2006, 2011 and 2014 which are presented in Table 1.

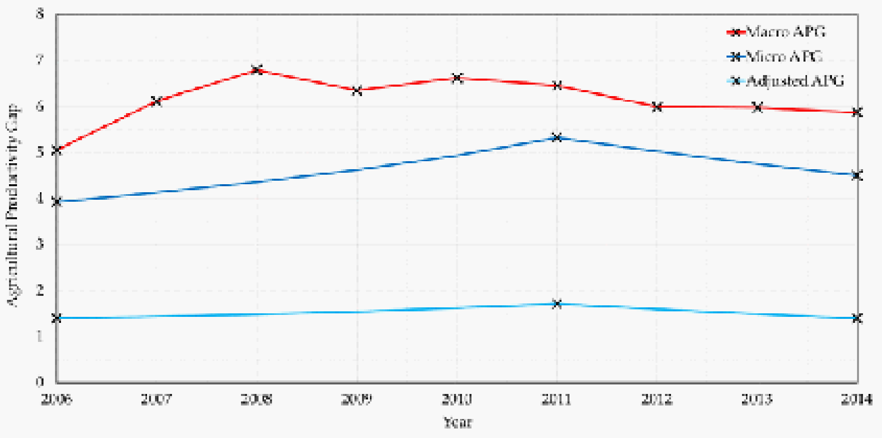
The results of the two labour adjustments are both significantly large, with non-agricultural workers supplying nearly twice as many hours compared to agricultural workers in addition to sizeable human capital differences.

The adjusted APG which is presented in Table 1 is calculated by applying the two labour adjustments to the micro APG. The results show that a large proportion of the macro APG can be explained by mismeasurement and improved labour input measures which account for differences in hours worked and human capital per worker across sectors.

This comparison can also be visualised in Figure 2. Between 2006 and 2014, the macro gap averaged 6.14, significantly higher than the adjusted gap which for the three household survey years averaged only 1.50. This is a massive improvement as the majority of the initial macro APG can be explained by the three contributing factors outlined above.

As the micro estimates are tackling mismeasurement issues, these results provide significant evidence for mismeasurement which once addressed, reduces the agricultural productivity gaps by a factor of approxi mately 1.3.

Figure 1
Comparisons of Rwanda's Agricultural Productivity Gaps



Interpreting the Gap

Taken literally, an agricultural productivity gap of 1.50 implies a sizeable misallocation of labour resources. Closing this gap through the reallocation of labour out of the agricultural sector and into the non-agricultural sector can lead to significant welfare gains at a relatively low cost, even when conditioned for hours worked and human capital.

It is worth noting that this reallocation does not necessarily imply rural-urban migration but instead the movement of workers into non-agricultural activities such as agro-processing. This adjusted gap of 50%, while significantly smaller than the macro APG estimates are still puzzlingly large and there are three main ways to interpret this gap.

Firstly, there may be additional factors contributing to this gap which have been omitted. The identification of such factors could reduce the size of the adjusted gap. This view is particularly appealing as it suggests that there is no significant misallocation of labour resources. Given the stability of the gap during the post-transition stage, it is possible that the adjusted gap can be reduced even further with the addition of several factors.

These include improving human capital measures since there are other factors which determine human capital beyond years of schooling. The inclusion of experience and training into human capital could significantly improve these. Costs of living may also be a contributing factor to the gap as these may differ across sectors.

If non-agricultural workers incur a higher cost of living, then this can reduce the adjusted gap. Finally, if labour is used more intensively in agricultural production than in non-agricultural production, this would further reduce the adjusted gap.

The second interpretation is that the agricultural productivity gap is driven by market forces. The main argument for this interpretation relies on selection effects such that more skilled workers select into the non-agricultural sector, leading to an agricultural productivity gap between average workers across sectors.

An alternative argument incorporates the gender dimension instead. Since the share of female workers in the agricultural sector is higher than in the non-agricultural sector, the presence of a gender pay gap will disproportionately affect

The transition stage from 2002 to 2005 is marked by a steep and permanent decline in the gap from 11.61 to 5.01 over this short time period

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> **While no country has developed through its agricultural sector, it is also true that no country has developed without it**

the agricultural sector, creating an agricultural productivity gap. Under this interpretation, the gap is not a result of any misallocation of labour.

The final interpretation takes the adjusted gap literally as a result of the misallocation of labour resources. The fact that the gap has remained rather stable for the past decade implies that there are structural factors preventing the gap from closing.

On the supply side, labour mobility frictions prevent workers from moving between sectors. A promising area of research focuses on financial and community networks.

These small networks, such as tontines, cooperatives and ikibina are important in the Rwandan context as they provide informal social insurance and other financial services.

There is evidence that community networks can prevent migration and cause wage gaps as they are often more prevalent in rural areas which lack formal financial institutions. On the demand side, a weak private sector can fail to generate sufficient non-agricultural jobs for workers to fill.

While this article focuses on the differences between the agricultural and non-agricultural sectors, there is significant overlap with the rural-urban divide and disentangling these two concepts.

LOOKING AHEAD AND POLICY IMPLICATIONS

The future of Rwanda's agricultural sector is promising. While the current state of agricultural productivity is much improved from the 1990s and early 2000s, there are still significant areas for improvement.

Approximately two-thirds of all workers are still employed in the agricultural sector, with a substantial share of these people working on subsistence farms. Moving towards market-oriented agricultural activities and adopting new technologies will be essential in keeping the adjusted gap tight as the non-agricultural sector continues to perform well.

In the long term, it is clear that policy should target the contributing factors of the gap. Investment in human capital, especially amongst future agricultural workers, will be critical. If the relatively low hours worked amongst agricultural workers is due to an abundance of available labour, then as workers move towards the non-agricultural sector, agricultural workers will be able to increase their working hours and subsequently their incomes. Policies that equalise the quantity and quality of labour across sectors will help to close the unadjusted gap.

In the short and medium term, the appropriate policy implications depend on the interpretation of the adjusted gap. In the case that there are additional contributing factors, policy should focus on equalising these factors across sectors once they are identified.

If market forces are driving the gap, then policy should target workers who lose out such as unskilled and female workers through supportive programmes that improve their economic opportunities.

Finally, if the gap is a result of the misallocation of labour resources, then policy should aim towards eliminating the structural factors preventing the gap from closing. This includes removing labour mobility frictions and adopting strong private sector development strategies.

Overall, a combination of these policies will most likely contribute to closing the gap. Further research on this topic will help to inform more effective policy.

AFRICA'S "DEMOGRAPHIC DIVIDEND" NARRATIVE ON TRIAL

By, Samuel Baker

In a recent proceeding, my two colleagues and I left a case unsettled. In the trial, I accused Africa's demographic dividend narrative to be much of a hype and on the defense; the two colleagues noted that the shift in Africa's demographic setting is indeed a golden opportunity for the continent. Now, I reckon it is high time we convened a jury.

The defense claims that Africa's growing population holds great economic benefits. They point to the optimistic view on the population growth – economic growth relationship arguing that with a large population, Africa will have abundant human and intellectual capital, as well as a large market size.

Indeed, it is predicted that by 2050, a quarter of the world's population will be in Africa and most of them the youth, and beyond 2050, half of the world's population growth will occur on the continent.

The defense argue that a large youthful population presents an opportunity for cheap labor that is a boon to manufacturing growth while a large population presents a market for consumption – this they argue, should create the need for global companies to consider Africa as a significant market for trade.

The defense point to the East Asian miracle as evidence that a demographic dividend is indeed positive for economic growth. They argue that China's large population has been the driver behind impressive growth rates in the country.

The large consumer base in China they note, has been a sweet spot that has garnered global attention and attracts investment into the country. Empirical analysis from an IMF paper found that a 1-percentage point change in the working age population increases real per capita GDP growth by 0.5 percentage, and they point to this evidence to support to their case.

Despite the convincing case by the defense, I still believe that the defendant should be found guilty as charged. First, the term demographic dividend does not apply to Africa if we closely examine the definition.

A demographic dividend occurs when the labor force grows rapidly than the population dependent on it. During this phase, working age population increases while fertility rates significantly decreases.

As such, resources are freed-up and family welfare improves, enabling savings, which in turn supports economic growth and development. As the defense noted, the East Asian countries benefited from such a demographic dividend. The falling fertility rates led to smaller families, which meant that families

> ***This allowed countries like South Korea and China to take advantage of the shift in global manufacturing and center their economic progress on export focused manufacturing.***

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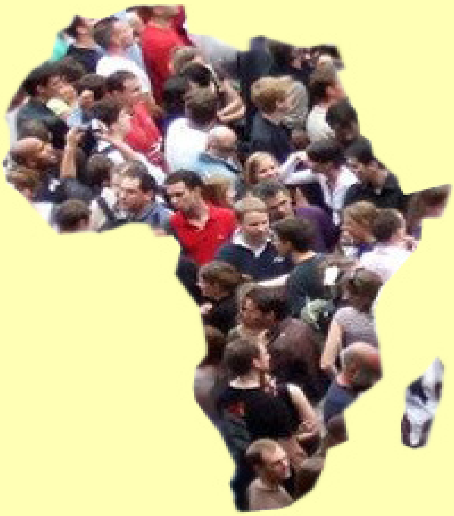

were able to afford high education spending per child helping to improve labor force skills.

This allowed countries like South Korea and China to take advantage of the shift in global manufacturing and center their economic progress on export focused manufacturing.

In most Sub Saharan countries however, fertility rates are still high and family sizes are still and will continue to be large (at least in the near future), given population growth forecasts. It is therefore likely that the increase in population will largely lead to a high number of unskilled workforce that should continue to fuel unemployment and strain public services.

There are exceptions of course, mostly in upper middle-income countries and in some lower middle-income countries. For example, Cape Verde has low fertility rates; it should continue to experience a demographic dividend.

In the last decade, Africa's GDP growth rates have averaged at 4.6% while annual population growth has averaged at 2.7%. This therefore means that annual per capita income growth has been smaller than 2% in the last decade while in China annual income growth rate has been around 7%. If Africa maintains the same pace of progress, it will take more than 80 years from now, for the continent to obtain today's advanced economy living standards.

As economic theory suggests, population growth can have a positive impact on economic growth, but, for Africa to benefit from such demographic shift, job creation will be crucial. The continent has also struggled on this front. For example, in the last decade, there was a 2.6% annual growth of the working age population, which added around 96 million working age people.

In the same period, only around 63 million jobs were created, leaving a significant gap. Each year, there are around 10 – 12 million young people that enter the job market in Africa, if job creation fails to keep up and remain at such a sluggish pace, this could spell disaster.

Some argue that since Asian countries like China are transitioning to consumer based economies, Africa will take the advantage of the manufacturing shift and become the next manufacturing hub, this as a result will allow for rapid job creation and spur export oriented manufacturing which should support economic growth.

It is however important to note that the current innovation and technology advances may pose a threat to this assumption. Automation for example promises to shake up the manufacturing industry.

As more and more repetitive work gets automated, physical jobs in the manufacturing may be eroded as the International Labour Organisation estimated in a 2016 report, that in various Asian countries, more than three quarters of low paid jobs in textiles and clothing are at risk of automation. If technology continues to change the shape of manufacturing, Africa may miss this train.

However, it is not all doom and gloom, and I believe that it is not too late for Africa to turn the surging population into an opportunity. By maintaining sound economic policies, ensuring relevant education and training individuals to take advantage of the technology advances and maximizing job creation in a diverse range of sectors such as agriculture and tourism as well as promoting programs that reduce fertility rates and promote family planning, Africa may reap the benefits.

Rwanda is a case in point. The country's National Strategy for Transformation, a 7-year plan with the objective of laying the foundation and appropriate strategies for radical economic transformation beyond poverty reduction, which will lay the foundation for vision 2050, an ambitious plan for Rwanda to be a high-income country in 2050, is a timely answer.

The plan will focus on building a vibrant and competitive private sector to lead economic growth, promote sustainable job creation, promote digital literacy among the youth and innovation, promote industrial development, trade and infrastructure and develop a service led economy.

These plans will set Rwanda as a diversified economy able to deal with any economic shocks. If more and more African countries can mimic Rwanda's impressive agenda, to strategically plan for the future ahead, then the continent may emerge a global powerhouse.

As for my case, I will leave it to the jury to deliberate. The Africa's demographic dividend narrative should get us to think more about how we could collectively ensure that Africa benefits from the growing population rather than glowingly nodding to the rhythms of this term.

Celebrating may be too early, let us get to work




The 2018 National Bank of Rwanda Research Day in pictures




Resilient Banks and a supportive regulator: developments in Rwanda's Banking sector 2017

Rwanda's banking sector stayed its course on a high growth trajectory in 2017; maintaining high solvency ratio, adequate capitalization, high return on investment and improvement in the quality of assets.

The sector witnessed growth in all areas; profitability, increased customer deposits and improvement in the quality of loans measured by a decline in non-performing loan (NPL) ratio from 8.2% in June 2017 to 7.7% in December 2017, a factor attributed to the close supervision of the National Bank of Rwanda, an improvement in economic peerformance as well as efforts by Banks to recover some of the loans.

Signs of a good year for the sector started to manifest in March 2017, when first quarter results for 2017 showed a rise in customer deposits in nine commercial banks being over FRW1,314 billion compared to Rwf1,280 billion in the same period of the previous year.

First quarter deposits of 2017 alone were close to total gross income for the whole banking industry maintained an upward trend with total banking sector net income (profit after tax) at

FRW30.6 Bn

in September 2017.

whole year deposits in 2016 that amounted to FRW 1,386 billion, reflecting growing demand for banking services, thanks to payment system modernization initiatives such as the cashless campaign by the National Bank of Rwanda.

These initiatives were helpful to solicit cash that was held by individuals outside the banking sector into the system.

Bank initiatives to attract deposits such as agency banking and mobile money partnerships also helped to reach the unbanked population.

This rise in customer deposits were helpful in boosting the financial ability of commercial banks to grow their loan books with gross approved loans to the private sector.

Following subdued demand during the last half of 2016 that was caused by slow economic activity, demand for credit started increasing in the third quarter of 2017.

Banks saw lending pick up during the fourth quarter of the year and is projected to maintain an upward trend into 2018 bolstered by big government spending in implementing the 2017/18 budget as well as the expected strong economic activity.

Annual growth in lending to the private sector, that is also equally growing, is an indication that Rwanda's banking system is supporting the financing of the real economy.

Growth in loans to the private sector has contributed to the country's strong economic performance, where for the last decade, GDP growth has averaged about 7% despite a turbulent global economic environment. This helped to keep Rwanda as one of the fastest growing economy in the region.

An increase in loans to the private sector have also meant more revenues for the banks whose average return on equity was at 9.6%, in June 2017.

On the other hand, total gross income for the whole banking industry maintained an upward trend with total banking sector net income (profit after tax) at FRW30.6 billion in September 2017.

This means that the sector is on a clear path to surpass the 2016 net profit of FRW34.9 billion, when the fourth quarter results of 2017 are added.

The sector performed relatively better during the fourth quarter of 2017, as a result of increased appetite for credit, higher economic activity and a decline in NPL ratio.

ASSET GROWTH

2017 also saw the banking system continue to build a strong asset base, remaining in a financially sound

condition, resilient and with high capital adequacy ratio, above the regulatory benchmark of 15%.
As of September 2017, the capital adequacy ratio (the measure of a bank's financial soundness) had risen to 22.2%, still above the minimum requirement.

This means that the industry is in position to function normally even in the wake of any shocks to the sector. Indeed, BNR's stress test of June 2017 suggested that banks in Rwanda would be able to withstand adverse external and domestic shocks.

The strong performance and resilience of the banking sector is a result of BNR's prudent surveillance through regular onsite inspections and offsite analysis to maintain stability and efficiency.

BNR continued to implement reforms designed to strengthen the banking sector, including increase in minimum capital from FRW1.5 billion to FRW 5 billion, strengthening corporate governance and loan classification, opening of the market to foreign banks and licensing of new banks that brought in new innovative products and competition in the market.

In May 2017, BNR put in place a regulation to implement the new minimum capital requirement to strengthen the solvency of the banks. Although full enforcement started at the beginning of 2018, by the end of June 2017, all banks had met the new minimum capital buffer requirements, thanks to huge buffer stocks that were already held by banks.

New reforms also saw the establishment of adequate legal and regulatory framework for banks and other financial institutions to enhance supervision; installation of new software to enhance surveillance as well as training of BNR's banking sector supervision staff to boost efficiency.

No new commercial banks were licensed to operate in 2017, as the industry maintained a total of 11 commercial banks, four microfinance banks and one development bank.

One of the new entrants, Crane Bank, was not affected by the closure and subsequent sale of its parent bank to another bank in Uganda.

This too shows how Rwanda's banking sector remains resilient, even in the face of external shocks.
2017 was on average a good year for the banking sector, thanks to efforts by both banks as well as the National Bank of Rwanda.

In 2018, growth prospects looks very positive and one can only hope that it will only get better for the sector.

The strong performance and resilience of the banking sector is a result of BNR's prudent surveillance through regular onsite inspections and offsite analysis to maintain stability and efficiency

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