

**UNIVERSITY OF RWANDA**  
**College of Business and Economics**  
**Masters of Science in Economics**

**THE IMPACT OF FINANCIAL INCLUSION ON**  
**(ECONOMETRIC STUDY: Quarterly data from 2006-2014)**

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## **DECLARATION**

I hereby declare that this research project entitled: **‘The Impact of financial inclusion on economic growth in Rwanda. Econometric study for the period 2006-2014’** is my own work. It is submitted in partial fulfillment of the requirements for the degree of Master of Economics at the College of Business and Economics at University of Rwanda. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorization and consent to carry out this research.

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**Date:**

## **DEDICATION**

To the loving memory of my sister, Yasmine RWANYINDO KAYIRANGIRWA.

## **ACKNOWLEDGMENT**

My sincere gratitude and thanks go to all persons who supported me in the successful conclusion of this thesis. I owe a lot of respect and appreciation to my supervisor Professor KIGABO RUSUHUZWA Thomas. Thank you for the guidance, valuable comments and constructive criticisms throughout this study.

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## **ACRONYMS & ABBREVIATIONS**

7YYPG: Seven Year Government Plan

ADF: Augmented Dickey-Fuller

AFI: Alliance for Financial Inclusion

AFR: Access to Finance Rwanda

AIB: Alliance Insurance Brokers

AIC: Akaike information criterion

ATMs: Automated Teller Machines

BK: Banque de Kigali

BRD: Rwanda Development Bank

BP: Banque Populaire

BPR: Banque Populaire du Rwanda

CGAP: Consultative Group to Assist the Poor

COGEAR: Compagnie de Générale d'assurances et Réassurances Au Rwanda

COGEBANQUE: Compagnie Générale de Banque

CORAR: Compagnie de Réassurance et d'Assurances Rwandaise

CPS: Credit to Private Sector

EAC: East Africa Community

EAP: East Asia and Pacific

ECA: Europe and Central Asia

FPE: Final Prediction Error

FSDP II: Second Financial Sector Development Program

GDP: Gross Domestic Product

GTBank: Guaranty Trust Bank

HQ: Hannan and Quinn's

ICPAR: Institute of Certified Public Accountants of Rwanda

IFC: International Finance Corporation

IMF: International Monetary Fund

IRF: Impulse Response Function

KCB: Kenya Commercial Bank

LAC: Latin America and the Caribbean



LR: Likelihood Ratio  
MENA: Middle East and North Africa  
MFI: Micro-Finance Institution  
NBR: National Bank of Rwanda  
NFES: National Financial Education Strategy  
NGDP: Nominal Domestic Product  
NISR: National Institute of Statistics of Rwanda  
OECD: Organization for Economic Co-operation and Development  
OLS: Ordinary Least Square  
POS: Point of Sale  
PP: Phillips and Peron  
RSP: Remittance Services Providers  
RSSB: Rwanda Social Security Board  
SA: South Asia  
SACCO: Savings and Credit Co-Operative  
SC: Schwarz information criterion  
SMEs: Small and Medium Entreprises  
SONARWA: Société Nouvelle d'Assurances du Rwanda  
SORAS : Société Rwandaise d'Assurances  
SSA: Sub-Saharan Africa  
UBPR: Union des Banques Populaires  
UN: United Nations  
VAR: Vector Auto Regressive  
VSLA: Village Savings and Loan Associations  
WBG: World Bank Group

## **ABSTRACT**

Financial inclusion consists of bringing low-income households and small businesses into the formal financial sector, protecting their assets, and helping them to manage financial risks and access credit.

Financial Inclusion is emerging as a global hot topic currently. In the recent past the financial inclusion was one of the key policy priorities among developed and developing countries. The theories of development economics suggested that the financial inclusion promotes efficient allocation of economic resources which potentially reduce the cost of capital, minimizing risk through structured financing, improving opportunities and income distribution.

Indeed, Rwanda has a lot to share and a lot to learn from sister countries' experiences in financial inclusion and its impact on poverty alleviation and inclusive development.

Rwanda has made significant strides, doubling formal inclusion from 21% to 42%, and reducing total exclusion from 52% to 28% in five years, between 2008 and 2012. Plans for the next five-year period are to again double formal inclusion to 80% by end of 2017.

Therefore, it facilitates in reducing poverty and eliminating the use of informal financing thus promotes economic growth. Although many researchers have conducted empirical studies on financial inclusion and its impact on economic growth over the years, there have not been much of empirical studies to assess the impact of financial inclusion on economic growth.

This thesis tried to fill the gap through assessing the impact of financial inclusion on economic growth through empirical study in Rwanda. In my empirical model the economic growth, the dependent variable is measured by GDP per capita. The level of financial inclusion is measured by variables which assess the dimension of availability, accessibility and usage of electronic banking such as branch penetration, presence of ATMs and domestic credit. I also used government expenditure, unemployment and inflation as control variables.

The overall result confirms that the financial inclusion has greater impact on economic development especially through availability of financial product and services and the usage of electronic banking.

## **CHAPTER I: GENERAL INTRODUCTION**

### **1.1 Background**

Financial inclusion is the process that ensures access, usage and availability of the formal financial system to all members in an economy. It is important to have an all-inclusive financial system to facilitate the allocation of resources, which reduces the cost of capital. Also, easy access to financial services can help to improve daily transactions and reduce the use of often exploitative informal credits (Pais, 2010).

The provision of safe and secure saving practices enhances the efficiency and welfare of a financial system. Financial Inclusion is a familiar concept in many countries, and in recent years it has become a policy priority for governments worldwide.

There is a general consensus about the importance of financial inclusion on development, particularly as a tool to improve poor household lives and speed economic activity. That is why global and national level policy makers have included financial inclusion in their development priorities (World Bank 2013, Alliance for Financial Inclusion 2013). Generally, poor lives and works in informal economy and is excluded from wage-earning employment opportunities. During the Financial Inclusion for Inclusive Growth and Sustainable Development international conference hosted in Kigali by Alliance for Financial Inclusion (AFI) and the National Bank of Rwanda (NBR), the importance of financial inclusion to the country's continued renaissance was emphasized by high-level leaders and policymakers.

The United States took legislative measures in 1997 through the Community Reinvestment Act, which obliges banks to offer credits to everyone, not just the wealthy. In France in 1998 the law of exclusion was approved, which stresses every individual's right to hold a bank account (Pais, 2010). All-inclusive policies were also taken by the banking sector; the Reserve Bank of India offers "General Credit Cards" to encourage wider participation in personal borrowing.

On 2004, the "Mzansi" low cost bank account was established in South Africa to target excluded individuals. Micro-finance institutions also provide a viable alternative to banks by providing similar services to people who are not yet ready to join the formal system (Sarma, 2011).

As a subject, financial inclusion has been widely discussed, with different authors offering different definitions; in 2008 the Government Committee on financial inclusion in India defined it as “the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as the weaker sections and low income groups at an affordable cost” (Rangarajan Committee, 2008).

Earlier, in 2006, Mohan argued “financial exclusion signifies the lack of access by certain segments of society to appropriate low-cost, fair and safe financial products and services from mainstream providers” (Mohan, 2006). Conroy had argued previously that “financial exclusion is a process that prevents poor and disadvantaged social groups from gaining access to the formal financial systems of their countries” (Conroy, 2005). That year, Carbo defined financial exclusion as “broadly the inability (however occasioned) of some social groups to access the financial system (Carbo, 2005). Ten years’ prior, Leyshon and Thrift recognized exclusion as “those processes that serve to prevent certain social groups and individuals from gaining access to the formal financial system” (1995).

This wide body of literature demonstrates the importance accorded to financial inclusion, due both to its positive contribution on a macroeconomic level and on an individual level. Further this suggests that financial inclusion can provide a road towards development throughout the world. Building on existing literature, the paper of Sarma and Pais (2010) attempts to find the relationship between financial inclusion and the economic development of the several countries, finding a positive correlation. This research was based on Beck’s previous studies of the financial sector’s outreach by using cross-country data (Beck, 2007).

The ultimate aim of policies and strategies for financial inclusion is to increase access to formal financial institutions and increase the uptake and usage of financial products and services (i.e. those provided by regulated service providers). The target of the Government of Rwanda is to increase the financial inclusion to 80% by 2017.

Indeed, Rwanda has a lot to share and a lot to learn from sister countries’ experiences in financial inclusion and its impact on poverty alleviation and inclusive development.

## **1.2 Problem statement**

The economic growth has been a major concern of the government of Rwanda by putting a lot of effort to sustain Rwandan economy and to improve social welfare. Even though Rwandan economy has recovered considerably since the 1994 genocide against the Tutsi; the GDP per capita is still low, around 695.7US\$, and over 39.1 percent of the population live under the poverty line.

Apparently, the alternative way to speed up economic development is through a developed financial system. However, Rwandan financial system remains shallow and financial depth is below the Sub-Saharan and East African averages.

Nevertheless, Rwanda has made significant progress in the area of financial inclusion from 21% to 42%, and reducing total exclusion from 52% to 28% between 2008 and 2012 and plan to double formal inclusion to 80% by 2017.

The findings from the Fin Scope Rwanda 2012 survey revealed that 72% of Rwandan adults were financially included, 42% were formally served (23% served by commercial banks and 33% served by non-bank formal institutions) and 58% used informal financial mechanisms. Based on those findings, the Government undertook many initiatives to address identified issues, a National Savings Mobilization Strategy called for the creation of at least one savings and credit co-operative (SACCO) in each of the 416 Umurenge (administrative units) in the country. Additionally, a Financial Sector Development Programme detailed an action plan for financial inclusion, including a national financial-education strategy, and the promotion of more players, products and services.

The purpose of this study is to find out how the level of financial development is linked to the economic growth so as to bring to the light, emphasis and pinpoint the crucial, critical and paramount importance of financial development to the economic development process of Rwanda.

### **1.3 Research objectives**

The global objective of this study is to assess the impact of financial inclusion on economic growth for Rwanda of financial inclusion has contributed to support economic growth.

As Specific objectives, this study will:

1. Analyze the progress made in Rwanda in terms of financial inclusion and its main drivers;
2. Analyze the access to financial services, mainly loans to initially excluded groups (women and youth) in the last decade (2006-2014);

### **1.4 Study hypothesis**

It can be agreed that Rwanda's financial inclusion in this period depends on economic growth; this means specifically that high economic growth in Rwanda has contributed to create good conditions for financial inclusion. In addition, one can assume that financial inclusion has contributed to high economic growth in Rwanda.

Therefore, this study will test two hypotheses:

The null hypothesis, H<sub>0</sub>: there is no causal relationship between financial inclusion and economic growth in Rwanda from 2006-2014?

The alternative hypothesis, H<sub>1</sub>: there is bio- directional causal relationship between financial inclusion and economic growth in Rwanda form 2006-2014?

### **1.5 Significance of the study**

Studies conducted on cross-sectional and panel data analyses revealed the absence or weak link between economic growth and financial inclusion in developing countries. The study will test the relationship.

### **1.6 Scope of the study**

This study will cover the period from 2006 to 2014. The choice of this period is guided by the availability of quarterly data.

## **1.7 Organization of the study**

The study is comprised of five chapters and the following are the components of each chapter.

The first chapter one covers the background of the study, the problem statement, research objectives, study hypotheses, significance of the study, scope of the study, and the organization of the study; the second chapter is the literature review as highlighted by different scholars which has relationship with the topic under study; the third chapter consists to define the main drivers of financial inclusion in Rwanda; the fourth chapter covers the methodology used, model formulation, data analysis and interpretation of the results on credit to public sector; the fifth chapter covers the conclusion and recommendations.



## **CHAPTER II: LITTERATURE REVIEW ON FINANCIAL INCLUSION AND**

### **ECONOMIC GROWTH**

#### **II.1 Introduction**

The causality effect between financial inclusion and economic growth has been a controversial issue for long years. Some researchers have found a positive impact of financial inclusion on economic growth, others, in cross-country or geographical regions and income groups; have found a significance relationship for some geographical regions and none in others, especially for developing countries. Even though the link between financial inclusion and economic growth is accepted, the direction of causality is still a debate. In this chapter, we present a review of literature on this issue from both theoretical and empirical grounds.

There is recognition that in countries at all income levels, there are population groups that are not adequately serviced by the formal financial system. Financial inclusion involves expanding their access to the financial system at an affordable cost.

Financial inclusion (or, alternatively, financial exclusion) has been defined in the literature in the context of a larger issue of social inclusion (or exclusion) in a society. One of the early definitions by Leyshon and Thrift (1995) define financial exclusion as referring to those processes that serve to prevent certain social groups and individuals from gaining access to the formal financial system.

According to Sinclair (2001), financial exclusion means the inability to access necessary financial services in an appropriate form. Exclusion can come about as a result of problems with access, conditions, prices, marketing or self-exclusion in response to negative experiences or perceptions. Carbo et al. (2005) have defined financial exclusion as broadly the inability (however occasioned) of some societal groups to access the financial system.

Thus, most of the definitions emphasize financial exclusion to be a manifestation of a much broader issue of social exclusion of certain societal groups such as the poor and the disadvantaged. Financial inclusion can be defined as a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy. This

definition emphasizes several dimensions of financial inclusion, viz., accessibility, availability and usage of the financial system. These dimensions together build an inclusive financial system. As banks are the gateway to the most basic forms of financial services, banking inclusion/exclusion is often used as analogous to financial inclusion/exclusion (Leeladhar, 2005).

Financial inclusion is more straightforward to define and recognize. Lower-income countries tend to see a large portion of their population and firms not having access to formal financial services for a number of reasons, including but not limited to branch networks of banks and other financial institutions, limited availability of Automatic Teller Machines (ATMs), the relatively high costs of servicing small deposits and loans; limitations on satisfactory personal identification, and limitations on collateralizable assets and credit information.

Definitions are:

“Financial inclusion is a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy (Sarma, 2008, P3). Ease of access is measured by the proxies such as number of ATMs per 1,000 populations.

“Financial inclusion aims at drawing the “unbanked” population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, and transfers to credit and insurance” (Hannig and Jansen, 2010).

“... the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost. It primarily represents access to a bank account backed by deposit insurance, access to affordable credit and the payments system” (Khan 2011).

Financial inclusion is most commonly thought of in terms of access to credit from a formal financial institution, but the concept has more dimensions. Formal accounts include both loans and deposits, and can be considered from the point of view of their frequency of use, mode of access, and the purposes of the accounts. There may also be alternatives to formal accounts, such as mobile money via mobile telephones. The main other financial service besides banking is insurance, especially for health and agriculture (Demirgüç-Kunt and Klapper 2012)

“Full financial inclusion is a state in which all people who can use them (including disabled, poor and rural populations), have access to a suite of quality financial services provided at affordable prices, in a convenient manner, and with dignity for the clients. Financial services are delivered by a range of providers, most of them private, to a financially literate and capable market.”

The financial inclusion goals can be met by initiative of banking sector to cut across various strata of society, gender, regions and income encourage the public to embrace the habit of banking. Most of the time financial inclusion means equity; it means that the entire country benefits from inclusive growth. Financial inclusion is achieved when people are aligned with economic growth such that all gain from it.

## **II. 1.1 Excepted outcomes of Financial Inclusion**

The importance of financial inclusion stems from various factors. First, an inability to access financial services could lead financially excluded entities to deal mostly in cash, with its attendant problems of safe-keeping.

Second, the lack of access to safe and formal saving avenues could reduce their incentives to save. When saving occurs, safety and interest rate benefits may not be adequate to the extent available in the formal system. Inadequate savings could lead households to depend on external sources of funds, in times of need. Often these sources are unregulated and with high interest rates which increase the risk of default by borrowers.

Third, the lack of credit products means inability to make investments and significantly improve their livelihoods. As a result, small entrepreneurs often lack an enabling financial environment to grow.

Fourth, the lack of remittance products leads to money transfers being cumbersome and high risk. Fifth, the lack of insurance products means lack of opportunities for risk management and wealth smoothening access to an organized financial system implies availability of standardized financial products from regulated institutions.

Savings products, small value remittances, insurance products and purchases on credit make financial planning easier. Savings products enable consumption smoothing over time. Remittance products are safer than cash payments, not only to prevent theft, but also to document proof of payment.

More importantly, credit histories are built which enable borrowing at more favorable terms in the future. With increasing automation, financial service providers rely on existing databases rather than personal interaction in order to make offers to customers. This puts financially excluded individuals at a distinct disadvantage as they are unlikely to feature in such databases. (Leyshon et.al.1998)

It is commonly argued that the economy as a whole benefit through financial inclusion (Mohan, 2006). It could be an important tool to reduce income inequality in the economy. Low- income individuals are often those not accessing financial services. Once access is provided, these individuals have greater potential to improve their income levels.

More financial resources become available for efficient intermediation and allocation. Greater financial stability may be expected if financial activity moves from unregulated to regulated institutions. Access to finance promotes more start-up enterprises, who often contribute to risk taking, employment and processes of creative destruction (Schumpeter, 1942).

As financial inclusion by definition implies increasing the coverage of the formal financial system, it may be expected to contribute to the development of a financial system. The relationship between financial inclusion and growth has been studied by a number of economists.

There is an agreement that the two are related, but there is a lack of consensus on the direction of causality (Fitzgerald, 2006). A number of empirical studies however suggest that development of the financial system spurs growth in an economy (King and Levine, 1993; Aghion, Howitt and Mayer- Foulkes, 2003 and Rajan and Zingales, 2003).

## II.1. 2 Determinants of Financial Inclusion

**Although physical access to financial institution and eligibility to open an account or use a product are prerequisites for the uptake of financial services, the actual uptake and usage of financial service or product depends on the individual. This would be influenced by the determinants of individual's behavior such as:**

**The characteristics of the individual** (demographics: age, gender, level of education, attitudes and perceptions about money, money management and financial services and institutions, aspirations and dreams, income levels, income generating activities and money management strategies

- The influence of the household on the decisions of the individual; the socio economic status of the household; the number of dependents in the household; the number of income earners; the effect of the household structure on the money management strategies and financial decisions in the household.
- The attributes of the community the individual lives in, the level of access to infrastructure, does it provide physical access to formal financial institutions? Are there roads? Is it transport available? Whether there is a sense of community connectedness. Does a tendency to engage informally in the community affect the individual's potential uptake of formal financial services?

### II. 1.3 Components of financial inclusion and its measurement

A review of the literature suggests that measuring financial inclusion is a key step in addressing financial inclusion. Numerous indicators have been developed in order to measure the extent of financial inclusion in different countries. However, the problem of measuring financial inclusion is not simple, as the following discussion will illustrate.

When measuring financial access, it is important to differentiate between access to and use of financial services. According to (Claessens, 2006), "access refers to the availability of a supply of reasonable quality financial services at reasonable costs" whereas "use refers to the actual

consumption of financial services”. Hence according to Claessens, in a demand/supply framework, access refers to supply and use is “the intersection of supply and demand schedules”.

Non-users of formal financial services can further be categorized into voluntarily self-excluded and involuntary excluded. Voluntary non-use may occur because of (perceived) lack of need, religious or cultural objections, or satisfaction with indirect access through friends and family. Involuntary exclusion may be due to low income of households or individuals, discriminatory policies, or price and product features (Thorsten, Asli, & Honohan, 2009).

Those who are classified as having access to financial services may in practice include the voluntarily excluded; that is, those who have access, but choose not to use. Individuals may choose not to use these services because of perceived high cost or the inability of the financial sector to offer low-cost solutions to them because of the sector’s inherent inefficiencies or lack of desire to serve this market.

In some cases, access exists but use is low because of the lack of understanding of the functions of a bank account. Many people think a bank account is needed only for borrowing and savings, even though in the modern economy a bank account is a necessity for accessing other services such as payments and insurance. Lack of understanding of this aspect, whether on the part of consumers, bankers, or policy makers, may result in unbanked individuals who could benefit from a bank account for their daily purchases, remittances and cash flow management, or it may result in people having a bank account but not understanding or make use of it.

The direct measurement of financial usage can be difficult. Country-level household surveys concerning the use (or access) of financial services is one way of gathering data.

However, datasets generally have information for specific types of institutions only (for example, commercial banks or microfinance institutions) and they differ across countries. Further, accounts are not associated one-to-one with individuals; multiple accounts may be used by single individuals or firms, or many individuals may share a single account. Finally, accounts may be inactive or dormant. Thus the number of accounts is not an exact measure of the number of banked individuals.

Consider expressing Financial Inclusion in terms of number of households. If 50% of households in an economy have bank accounts, then Financial Inclusion from household data might suggest an inclusion of 50%. However, if on the average, there are 2 adults living in each household, then the individual adult Financial Inclusion may be as low as 25%. While the proportion of households with an account is likely to be somewhat higher than the adult proportion, the difference may not be all that great (Honohan, 2008). According to the World Bank there are approximately 6.9 billion bank accounts worldwide.

However, in the developed world each person has on average 3.2 accounts and 19% of adults don't have an account, whereas in the developing world each person has on average only 0.9 accounts, and 72% of adults don't have an account. Since this thesis is not primarily about measuring access or use, access and usage are used synonymously here, which may not be a bad approximation (Honohan, 2008).

Despite differences in Financial Inclusion measures, Honohan has tried to “splice” data sources from different household surveys and for bank account information and using Ordinary Least Square (OLS) regression estimated the following for all countries (Honohan, 2008):

- The number of bank accounts per 100 adults
- The household survey-based percentage access for all countries. If data on access from a household survey were not available, the author constructed the percentages as a function of the estimated number and average size of bank accounts.

Financial inclusion by itself is a multi-faceted concept with a number of nuanced components, all or some of which may be relevant to the specific country agenda. Below we offer examples of four commonly used lenses through which financial inclusion can be defined, in order of complexity:

**a. Access**

This component is concerned primarily with the *ability* to use *available* financial services and products from formal institutions. Understanding levels of access may therefore require insight and analysis of potential barriers to opening and using a bank account for any purpose, such as cost and physical proximity of bank service points (branches, ATMs, etc.).

A very basic proxy for access can be derived through counting the number of open accounts across financial institutions and estimating the proportion of the population with an account. Data on access can usually be obtained through information provided by financial institutions.

#### **b. Quality**

As a measure of the relevance of the financial service or product to the lifestyle needs of the consumer, quality encompasses the experience of the consumer, demonstrated in attitudes and opinions towards those products that are currently available to them.

The measure of quality would therefore be used to gauge the nature and depth of the relationship between the financial service provider and the consumer as well as the choices available and their levels of understanding of those choices and their implications.

#### **c. Usage**

Concerned with more than basic adoption of banking services; usage focuses more on the *permanence* and *depth* of financial service / product use. In other words, determining usage requires more details about the regularity, frequency and duration of use over time. Usage also involves measuring what combination of financial products is used by any one person or household.

#### **d. Welfare**

The most difficult outcome to measure is the impact that a financial device or service has had on the lives of consumers, including changes in consumption, business activity and wellness. Distinguishing the role of financial services on the people's lives, without mistaking it for another concurrent factor, such as increased income, requires a certain research design. In order to acquire information on quality, usage and welfare, it is critical to have information from the user's point of view, i.e. data gathered through a demand-side survey.

Measuring financial inclusion is a challenge due to the difficulties in differentiating between voluntary and non-voluntary financial exclusion. The former refers to the population that has the ability to access financial services, but does not voluntarily do so. This segment of the population needs to be excluded from estimations of financial exclusion, posing measurement challenges.



To date, financial inclusion measurement has been mainly approached by the usage and access to the formal financial services by using supply-side aggregate data (e.g. Honohan (2007); Sarma (2008, 2012); Chakravarty and Pal (2010) and Amidžić et al. (2014)).

The only work that relies on demand-side data, at individual level, focuses on several usage- and barriers-related indicators individually (Demirgüç-Kunt and Klapper, 2013). However, monitoring different indicators individually, although useful, does not offer a comprehensive understanding of the level of financial inclusion across countries. On the other hand, as we mentioned, the few attempts to measure financial inclusion through composite indices are incomplete and subject to methodological problems and measurement errors.

Researchers therefore focus on measures of use of financial services. A basic measure used is the number of credit and deposit accounts (per thousand adult persons). This measure however has limitations, as there may be individuals or firms with multiple accounts. There also may be accounts which exist on paper but are inactive for long periods.

High usage levels of formal financial services or a broad availability of points of access do not mean necessarily that a system is inclusive per se. The usage of formal financial services can be conditioned by other socio-economic factors such as GDP per capita, human capital, legal framework, cultural habits or development status that make individuals use these kinds of services in a particular manner.

We consider the use of formal financial services as an output of financial inclusion rather than a measure of the inclusiveness of a financial system in itself. Likewise, the availability of infrastructure, ATMs and bank branches, captures the extent of accessibility to the formal financial system only partially. Since we do not have information about location or concentration of these points of service, it is not accurate to assert that higher measured levels of these indicators represent a more inclusive financial system.

## **II.2 Economic growth**

The strong relationship between financial inclusion and economic growth is well documented in the literature (see, for example, King and Levine, 1993; Beck *et al.*, 2000; Demirgüç-Kunt and Maksimovic, 1998; Beck *et al.*, 2004; Levine, 2005; Klapper *et al.*, 2006; Demirgüç-Kunt *et al.*, 2008). In more recent years the debate expanded to include the notion of financial “exclusion” as a barrier to economic development and the need to build inclusive financial systems (Beck *et al.*, 2008).

Recent empirical evidence using household data indicates that access to basic financial services such as savings, payments and credit can make a substantial positive difference in improving poor people’s lives (Caskey *et al.*, 2006; Dupas and Robinson 2009). For firms, especially small and medium enterprises (SMEs), access to finance is often the main obstacle to growth (Schiffer and Weder, 2001; Cressy, 2002; IADB, 2004; and Beck *et al.*, 2005, 2006, and 2008).

Accordingly, financial sector reforms that promote financial inclusion are increasingly at the core of the international development agenda for policy makers and development institutions at the global level. The United Nations (UN) has declared 2005 the Year of Microfinance, and the recent Pittsburg and Korea G-20 communiqués increasingly underscore the importance that this topic has gained in the international arena. The Nobel Institute awarded the Nobel Peace Prize to the founders of microfinance, Muhammad Yunus and the Grameen Bank, in 2006.

New international bodies, such as the Alliance for Financial Inclusion (AFI) have emerged whose primary objective is to advance financial inclusion for the world’s poor. The International Monetary Fund (IMF) and the International Finance Corporation (IFC) also increasingly pay attention to this debate. The IMF has launched a new database on financial inclusion, and the IFC together with Consultative Group to Assist the Poor (CGAP) and AFI have been leading the G-20 discussion around financial inclusion for households and SMEs. The Bill & Melinda Gates Foundation have just pledged \$500 million per year over the next five years to expand access to saving services.

Against this backdrop, the World Bank Group (WBG) has initiated the Financial Access indicators and reports to respond to a higher demand for data and measurement of financial inclusion. This initiative aims to fill the gap in the data landscape by collecting supply-side data on financial access as well as data on financial inclusion policies and regulations from

financial regulators around the world. The pilot round of surveys was implemented and published as *Banking the Poor* in 2008, which was based on data from both regulator and bank surveys, covering 54 countries around the world with a strong focus on Sub-Saharan African countries. Subsequently, CGAP and the WBG launched Financial Access 2009, the first in an annual series of reports to inform policy debate and monitor statistics of financial access worldwide.

Financial Access 2009 introduced statistics on the use of financial services in 139 countries and mapped a broad range of policies and initiatives supporting financial inclusion, focusing on data collection and measurement challenges. Building on this, Financial Access 2010 updated statistics on the use of financial services and analyzed changes that took place in 2009 a turbulent year for the financial sector in most countries around the world. As more countries provided more and higher quality data after the 2009 report, the focus shifted to the analysis of financial inclusion policies around the world (see World Bank, 2008; CGAP and the World Bank, 2009 and 2010).

The study uses the Financial Access database to count the number of unbanked individuals in the world, and analyze the change of access to formal financial services around the world. Next, it reviews the role of the main financial regulator in relation to the implementation of financial inclusion reforms and mandates to give a broad global picture of the state of financial inclusion policies.

The findings indicate that 56 percent of adults worldwide are unbanked, although the numbers differ across high-income and developing countries (17 percent and 64 percent, respectively). Overall, we predict a slight improvement in access to financial services in 2009: approximately 50 million more adults have accounts, although the adult population increased by approximately 79 million. The results of the econometric analysis confirm the earlier findings in the literature that higher deposit and/or loan correlation is associated with higher economic and financial development as measured by GDP per capita, the amount of electricity use, the availability of explicit deposit insurance and better credit environment, etc.

Although access to deposit services has improved in 2009, the global financial crisis took its toll: volume of deposits and loans shrank. The world as a whole added 65 deposit accounts per 1,000 adults but the number of outstanding loans remained more or less the same (these are calculated

for a subset of countries with comparable data in 2008 and 2009). At the same time, global retail networks, consisting of financial institution branches, ATMs, and POS terminals expanded. Per 100,000 adults, there are 167 new POS terminals, five ATMs, and one bank branch.

The analysis of data on financial inclusion mandates under the purview of financial regulators indicates that financial inclusion is high on policymakers' agendas and reforms are widespread. However, implementation capacity is often limited. Countries that have financial inclusion strategy documents also have more topics under the purview of financial regulators with more resources. Low-income countries have more topics under the purview of financial regulators, but fewer resources.

The data are compiled from various sources: recent Living Standard Measurement Surveys (World Bank, various years) where available, as well as regional sources: for the European Union, the European Commission's Eurobarometer, Special Barometer 260 (2007); for Africa, Fin Mark Trust's Fin Scope; for Latin America, Tejerina and Westley (2007), the MECOVI database, and Barr *et al.* (2007); and Nenova *et al.* (2007). These data are referenced and expanded upon in Claessens (2006), Honohan (2008), Gasparini *et al.* (2005) and Beck *et al.* (2007). Note that although some of these surveys are at the household level and some are at the individual level, Honohan (2008) argues that they can be used interchangeably.

Kendall *et al.* (2010) develop a different methodology and predict the number of accounts for each type of regulated financial institution in the Financial Access database. They then convert the number of accounts into the number of banked adults.

The next step was to calculate the number of unbanked adults in the world. Kendall *et al.* (2010) predict that approximately 2.7 billion adults in the developing world and 160 million adults in the developed countries are unbanked using data from Financial Access 2009 as well as other sources.

As their methodology differs, the predictions based on the methodology presented above are not comparable to their numbers. Hence, then redo the prediction exercise with the methodology of Kendall *et al.* using updated data from Financial Access 2010 to understand if there is a major change in the number of unbanked adults. In doing so, we also update the predictions of Kendall *et al.* by expanding their coverage.

In the end, using the methodology of Kendall *et al.*, they arrive at two sets of predictions: one for 2008, and the other for 2009, both complemented with additional data from a variety of sources and for the same sample of 191 countries.

Kendall *et al.* (2010) use a variety of econometric models to predict the number of commercial bank deposit accounts around the world.

The estimation results for the two sets of predictions mentioned above, which are almost identical to the results reported by Kendall *et al.* using Financial Access 2009 data. We then use these models to predict the number of commercial bank deposit accounts for those countries for which data are unavailable.

For the rest of the non-bank financial institution types, no estimation was made as the number of comparable observations at the country level is not sufficient. In addition, not all countries have different types of non-bank financial institutions.

Instead, Financial Access data for both years are complemented by other data sources and the number of deposit accounts for each institution type for each reporting country is counted.

The total number of deposit accounts across all institutional types within each country is then calculated by adding up the numbers for each institutional type. This prediction exercise yields the total number of deposit accounts in each country. However, the indicator of interest is the total number of banked (or unbanked) adults.

Hence, following Kendall *et al.*, we convert the number of deposit accounts to the number of individuals with an account by using their estimate that, on average, each individual has 3 deposit accounts (Kendall *et al.* (2010) use household survey data together with *Financial Access* data to obtain this estimate).

As a result of this exercise they revised the estimate by Kendall *et al.* (2010) for the number of unbanked: as of December 2008, they predict that approximately 2.8 billion adults are unbanked, 175 million of which are in high-income countries, and 2.63 billion are in the developing world. These numbers imply that 58 percent of the world is unbanked (21 percent of adults in high-income countries, and 66 percent in developing countries). The numbers slightly improve by the end of 2009. A total of approximately 2.75 billion adults around the world are predicted to be

unbanked, out of which 138 million live in high-income countries and 2.61 billion live in developing countries. Overall, 56 percent of the world is unbanked by the end of 2009, with 17 percent of adults unbanked in high-income countries and 64 percent in developing countries. Hence, about 50 million more adults in the world have bank accounts, and most of the improvement is seen in high-income countries.

Note that, at the same time, the total adult population in the world increased by approximately 79 million.

### **II.3 Financial inclusions across Africa**

African countries experienced positive developments in access to financial services in recent decades. In many African countries with the deepening of the financial sector, more financial services, especially credit, is now provided to individuals and enterprises. Similarly, new technologies such as mobile money help broaden access to financial services, including savings and payment products.

However, the financial system of many African countries still remain under-developed as compared to other developing economies even though most of these countries have undergone extensive financial sector reforms in the last two decades. Indicators of the use of financial products and services by adults and enterprises in the region show that many challenges remain toward building a more financially inclusive financial sector in Africa.

For instance, recent evidence from Global Findex (Demirguc-Kunt and Klapper (2012) database shows that less than a quarter of adults in Africa have an account with a formal financial institution and many adults in Africa use informal methods to save and borrow. Similarly, many Small and Medium Size Enterprises (SMEs) in Africa cite access to finance as a major obstacle. Compared to other economies, many firms in Africa lack proper access to a bank line of credit is a major obstacle for firm growth. In addition, other financing sources such as equity markets are underdeveloped.

Financial systems in Africa generally lag behind those in other developing economies, despite the fact that many significant improvements were implemented within the past decades. An

international comparison of private credit to GDP, a main indicator of financial depth shows a gap with other developing economies (World Bank, 2012).

For example, the ratio of private credit to GDP averaged 24% of GDP in Sub-Saharan Africa in 2010 and 39% in North Africa, compared with 77% for all other developing economies, and 172% for high income economies.

The nonbank segments of Africa's financial systems show an even lower degree of development than banking. Less than half of African countries have stock markets and only a few of these are liquid (Beck, et. al. 2011).

With the exception of South Africa, African stock exchanges are small as measured by the ratio of market capitalization to GDP; only 38% on average, as compared to 44% in all other developing economies and 62% including high-income economies (World Bank, 2012). In addition, African stock markets are among the most illiquid in the world as measured by the ratio of traded to listed stocks (Beck et al., 2011).

The depth of African financial systems has improved within the past two decades, but the gap with other developing economies still remains. In the following two sections we investigate what is behind the macroeconomic indicators and examine financial inclusion from the perspective of the users of these financial services.

Until now, in Africa and elsewhere, little had been known about the reach of the financial sector; the extent of financial inclusion and the degree to which such groups as the poor, women, and youth are excluded from formal financial systems. Systematic indicators of the use of different financial services had been lacking for most economies.

Overall, 23% of adults in the Africa region have an account. Within Africa, there is a large variation in account ownership: 24% of adults in Sub-Saharan Africa report having an account at a formal financial institution, though this ranges ranging from 51% in Southern Africa to 11% in Central Africa, in the Democratic Republic of Congo and Central African Republic, more than 95% of adults are unbanked (i.e. do not have an account at a formal financial institution). In

North Africa 20% of adults have an account at a formal financial institution ranging from 39% in Morocco to 10% in Egypt.

In Africa men are more likely than women to have an account at a financial institution though the gender gap is relatively small compared to other regions. Adults in the highest within-economy income quintile are almost four times as likely to have a formal account as those in the lowest income quintile, on average. Similarly, adults with a tertiary education and those ages 25-64 are particularly likely to report having an account at a formal financial institution.

Indicators of financial use show a positive but imperfect correlation with indicators of financial depth such as credit to the private sector/GDP. This correlation shows that access really is a distinct dimension. Financial systems can become deep without delivering access to all.

The positive but imperfect correlations of financial services usage with financial depth raise questions regarding the drivers of cross-country differences in financial use and access. The correlations also suggest that there might be room for policy reforms to increase the level of financial inclusion (World Bank, 2008).

#### **II.4 Financial Inclusion in Rwanda and main drivers**

Rwanda has made significant progress in the area of financial inclusion. Since a 2008 Fin Scope survey measuring the state of financial inclusion in the country found that only 21% of Rwanda's adult population (over age 15) was accessing formal financial services and 52% were completely financially excluded, the Government undertook many initiatives to address these findings.

A National Savings Mobilization Strategy called for the creation of at least one savings and credit co-operative (SACCO) in each of the 416 Umurenge (administrative units) in the country. Additionally, a Financial Sector Development Programme detailed an action plan for financial inclusion, including a national financial-education strategy, and the promotion of more players, products and services.

By 2011 the number of adults over age 15 with an account at a formal institution was 33%, according to the World Bank's Global Financial Inclusion (Global Findex) Database. The National Bank of Rwanda (NBR, the central bank) has since increased its target of achieving



financial inclusion to 90% of its adult population by 2020, an expansion on its original target of 80% by 2017, under the bank's Maya Declaration commitment.

At the end of June 2013 the Rwandan banking industry included nine Global Microscope 2014, the enabling environment for financial inclusion; 8 commercial banks and five specialized institutions (including three microfinance banks [MFBs], one development bank, and one co-operative bank).

The microfinance sector comprises 490 institutions of which 12 are limited companies and 478 are SACCOs (including 416 Umurenge SACCOs). There are plans to consolidate all SACCOs into a cooperative bank at national level, in an effort to ensure effective monitoring and improve efficiency in the microfinance sector.

Main drivers of financial inclusion: The introduction of Umurenge SACCOs significantly changed the landscape of formal access in Rwanda; for example, almost one-quarter of Rwandans aged 18 and older are now members. The expansion of bank branches, as well as the introduction of agent banking, mobile banking, ATMs, and mobile money contributed to an increase in financial inclusion.

There are numerous ongoing government initiatives, in partnership with key stakeholders such as Access to Finance Rwanda, the World Bank, UN and Visa, which will result in a more inclusive and innovative financial system, including the development of a financial consumer-protection law, a financial-literacy curriculum in schools, and a fully interoperable payments system.

Other key developments in the microfinance sector include the introduction of new products and services, an increase in foreign banks (including two Kenyan banks), more insurance companies, new capital markets, and agent banking reaching new and more rural areas.

The year 2009, also saw several initiatives in mobile payments and remittances being licensed. MTN was given the authorization to operate the "MTN Mobile Money" as a mobile payment service and other standalone Remittance Services Providers (RSP) were licensed. Notable among them are: Dahabshill money transfer and Express Union Money transfers. This will ensure that the Rwandan Diaspora can easily remit funds back home and will also enhance the compilation of our remittances statistics.

As challenges the introduction of more players into the Rwandan financial system and competition in the microfinance sector have resulted in poor credit-collection practices and over indebtedness; especially in the informal sector.

Rwanda is also challenged with low levels of financial literacy that constrain the demand for and use of financial services. A World Bank diagnostic review of financial literacy found that 58% of adult's fear that banks will seize their property if they borrow from them, and around 60% expressed the need for more information on how to keep money safe, how credit works, and how to spend money wisely.

There is a need to adapt the right products and services to fit different segments of the population, especially in a country with a high youth population. The pending financial-consumer protection law and financial-education initiatives are expected to play an instrumental role in increasing the awareness and protection of low-income populations in accessing financial services.

Broadly viewed, the overall objective of financial sector development would therefore be to decrease the proportion of the population who are financially excluded and to specifically drive formal inclusion.

There has been a sharp decrease in financial exclusion over the last four years and a corresponding increase in financial inclusion, both formal and informal. The financially included can use a range of financial products, both formal and informal, but we count someone as 'banked' if they use a bank even if they also use other formal product and/ or informal product. The 'other formally served' may also use informal products, but those counted as informally served use only informal products. In total 22.8 percent of adults use bank products/services, 32.8 percent use other formal products or services and 57.5 percent use informal services.

## **II.4.1. Action Plan for Financial Inclusion in Rwanda**

### **a. Defining and Monitoring Financial Inclusion**

The Fin Scope definition of inclusion will be refined and expanded to more fully capture semi-formal providers such as Village Savings and Loan Associations (VSLA). Monitoring will be enhanced, where possible to provide disaggregated data by gender and age group.

### **b. National Financial Education and Financial Literacy Strategy**

Broadening and deepening levels of financial literacy and promoting financial education is a precondition to achieving the financial inclusion target. Five years ago, at least half of the population aged 16 years and over was completely unfamiliar with basic financial concepts and products including savings accounts and current accounts.

The significant increase in outreach has in part addressed this issue, but there is more to do. Based on soon to be completed studies and leveraging off existing initiatives such as the district Access to Finance Forums and the VSLAs, a nation-wide district-focused financial education and literacy program will be rolled out to ensure that all Rwandans obtain a basic understanding of financial concepts and products within five years.

This is a key element of the financial inclusion strategy, as having access to products and services is only one part of financial inclusion. Perhaps more importantly, individuals require sufficient understanding of financial concepts to make effective use of the available products to meet their needs.

In addition to the basic financial literacy and education program, an Institute of Entrepreneurship, Cooperatives and Microfinance will be established to provide mid-level financial training. There is currently a large gap between the supply of individuals with technical financial training and the demands throughout the economy.

One of the primary constraints to expanding the financing provided to small enterprises is the small number of entrepreneurs capable of providing potential lenders with financial records,

projections and business plans. Cooperatives and microfinance institutions (MFIs), particularly savings and credit cooperative (SACCOs), have an unmet need for cashiers, clerks and loans officers with basic financial training.

A Financial Institution is an establishment that focuses on dealing with financial transactions such as: investments, loans and deposits. Conventionally, financial institutions are composed of organizations such as banks, trust companies, insurance companies and investment dealers. Almost everyone has deal with a financial institution on a regular basis.

Everything from depositing money to taking out loans and exchange currencies must be done through financial institutions.

Since all people depend on the services provided by financial institutions, it is imperative that they are regulated highly by the federal government. For example, if a financial institution were to enter into bankruptcy as a result of controversial practices, this will no doubt cause widespread panic as people start to question the safety of their finances. Also, this loss of confidence can inflict further negative externalities upon the economy.

Business dictionary defines Financial Institutions as Private (shareholder-owned) or public (Government owned) organizations that broadly speaking act as a channel between savers and borrowers of funds (suppliers and consumers of capital).

Two main types of financial institutions (with increasingly blurred dividing line) are: (1) Depository banks and credit unions which pay interest on deposits from the interest earned on the loans, and (2) Non-depository insurance companies and mutual funds (unit trusts) which collect funds by selling their policies or shares (units) to the public and provide returns in the form periodic benefits and profit payouts.

## **CHAPTER III: EVOLUTION OF FINANCIAL INSTITUTIONS IN RWANDA**

### **III. 1. Overview of financial institutions and financial inclusion**

This chapter narrows the evolution of the financial institutions in Rwandan case and highlights the progress made by the Rwandan financial system. To situate the level of economic growth in macroeconomic perspective, a brief review of Rwandan economy is first presented.

#### **III.1.1 Evolution of financial institutions in Rwanda**

The financial sector of Rwanda has improved greatly 72% of Rwandan adults are financially included, with 42% of the Rwandan population in the formal financial system (23% served by commercial banks and 33% served by non-bank formal institutions), and 58% use informal financial mechanisms.

The banking sector is comprised of 12 commercial banks, 3 microfinance banks, 1 development bank and 1 cooperative bank. The microfinance sector is comprised of 490 Institutions of which 11 are limited companies and 479 SACCOs (including 416 UMURENGE SACCOs). There are 14 insurance companies (9 non-life insurers, 3 life insurers and 2 public insurers). One public pension fund which is the Rwanda Social Security Board (RSSB), ninety (90) operational forex bureau and one (1) stock exchange (Rwanda Stock Exchange).

The financial institutions in Rwanda have been summarized to include the following

- National Bank of Rwanda;
- Insurance Companies in Rwanda: SONARWA Générale Insurance Ltd, SORAS Assurances Générales Ltd (SORAS AG Ltd), Société Rwandaise d'Assurances Vie Ltd (SORAS-VIE Ltd), SAHAM Assurance Rwanda Limited, PRIME Insurance Ltd, PHOENIX of Rwanda Assurance Company S.A, PRIME LIFE Insurance Ltd, SONARWA Life Assurance Company Ltd, UAP Insurance Rwanda Limited, RADIANT Insurance Company, BRITAM Insurance Company Rwanda Ltd, SAHAM Assurance Vie Rwanda Limited
- Commercial Banks and Microfinance in Rwanda: Bank of Kigali (BK), Access Bank Rwanda, IM&F, Guarantee Trust Bank, Banque Populaire du Rwanda (BPR), Ecobank Rwanda Ltd, Equity Bank Rwanda Ltd, Urwego Opportunity Bank (UOB) , Compagnie

Générale de Banque (COGEBANQUE), Kenya Commercial Bank Rwanda Ltd (KCB), Crane Bank Rwanda, Rwanda Development Bank (BRD), Zigama Credit and Savings Society Bank, Bank Of Africa Ltd (former Agaseke Bank), Unguka Bank Limited, AB Bank Rwanda

In line with measuring access to finance, a second Fin Scope survey has been undertaken. Preliminary findings of Fin Scope Rwanda 2012 show that the percentage of adult population having access to formal financial services increased from 21.1% in 2008 to 42% in 2012.

The percentage of adult population informally served is 29.8% in 2012 from 26.4% in 2008 that is in total, adult population financially included increased to 71.8% in 2012. The percentage of adult population financially excluded decreased from 52.4% in 2008 to 28.1% in 2012. It is worth mentioning that this level of inclusion was reached mainly due to the impact of UMURENGE SACCO Program and financial awareness campaign.

According to the country's policy of empowering SMEs, which is observed as the key catalyst for GDP growth and employment creation, the BNR has taken proactive steps in this regard. Between March to May 2012, BNR in partnership with World Bank conducted a supply SME financing survey to assess the obstacles of financing to SME's in Rwanda and thereafter propose appropriate policies.

The preliminary findings indicate positive outlook: on average, SMEs constitute 17% of the overall lending portfolio in Rwanda, which is higher compared to 5% in Nigeria, about 8% in South Africa and 16% across developing economies. In terms of distribution by sector of activities, commerce and hotels, and mortgage industry have big shares, 41% and 22% respectively. Other financed activities are manufacturing activities (9%); agricultural, fishery and livestock (9%); transport and warehousing insurance (4%), service sector (4%); water and energy activities (4%), non-classified activities (4%) and OIF and insurance (2%).

In addition, BNR has undertaken appropriate measures to break the traditional norms of over-reliance on real estate and land as prime collateral by introducing the enforcement of movable collateral supplemented by better credit information provided through the new private credit reference bureau.

**Table 1: Financing of SMEs by banks and MFIs (in “000” Rwf)**

Sector	2008	2009	2010	2011	Jun-12
Banks	77,200,670	108,733,789	108,015,099	118,421,717	139,999,822
MFIs	815,038	2,732,746	3,470,400	6,523,902	7,687,818
Total	78,015,708	111,466,535	111,485,499	124,945,619	147,687,640

Source: BNR, Financial Stability Directorate

Access to finance by gender indicate that generally, women’s appetite and courage to take loans is improving which is a positive indicator to empower women out of poverty. In 2006, only 16% of loans by banking sector were granted to women against 22% in 2011. Furthermore, monthly comparison indicates that about 75% (Rwf 16.6 billion) and 25.0% (Rwf 5.5 billion) of loans issued by banks were disbursed to men and women respectively in June 2012 compared to the 80.5% and 19.5% recorded in June 2011. In addition, 42% of account holders in microfinance sector are women.

Considering the geographical distribution of loans, Kigali city takes the lion’s share of 73% for new loans disbursed in the month of June 2012 followed by Western province (7%), Southern province (8%), Eastern province (8%) and Northern province (4%).

The following table depicts the statistics showing the progress in electronic payment system:

**Table 2: Statistical data on electronic means of payments**

	Number of Subscribers			Number of Transactions			Value (Million RWF)		
	2011	March 2012	June 2012	2011	March 2012	June 2012	2011	March 2012	June 2012
POS	-	-	-	38,440	9,957	12,341	73	2,424	2,058
ATMs	-	-	-	1,976,376	1,082,223	1,420,583	122,536	35,846	43,763
Mobile Banking	155,986	198,590	248,689	527,300	33,655	253,392	5,215	179	411
Internet Banking	-	5,841	6,237	1,493	35,513	36,828	708	4,188.5	4,568
Mobile payments	639,673	765,416	968,315	4,323,490	2,767,884	4,301,744	51,024	26,476	33,737

Source: BNR, Financial Stability Directorate

### **III.2 Physical access to formal financial institutions**

In order to assess the extent to which Rwandan adults had access to formal financial institutions in Rwanda, the Fin Scope 2012 survey looked at:

- The geographical distribution of Rwandan adults in relation to the geographical distribution of formal financial institutions.
- The awareness of adults regarding the location of these institutions and their perceptions regarding physical accessibility.

Data collected by Access to Finance Rwanda (AFR) for the Fin Scope 2012 survey regarding the physical locations of access points of formal financial institutions, and census data provided by the Rwanda National Institute of Statistics (NISR), enabled the geographical mapping of the location of access points in relation to the geographical distribution of adults (Figures 1 to 3). This led to the conclusion that physical access or proximity to financial institutions did not serve as a major obstacle to formal financial inclusion:

- 88% of Rwandan adults lived within an 8km radius of a commercial bank access point whilst 60% lived within a 5km radius.
- 68% of adults lived within an 8km radius of a microfinance institution access point; 44% within a 5km radius.
- 91% of adults lived within a 5km radius of an Umurenge SACCO; 56% lived within a 3km radius.

Fin Scope 2012 findings indicated that the most prevalent factor considered by Rwandan adults in choosing formal financial institutions was convenience of access. Based on the premise that the longer it takes to access infrastructure or a service, the less likely it is to be used, the Government of Rwanda aims to make services available to people within an hours' walking distance, the Fin Scope 2012 survey also enabled the assessment of perceptions regarding the amount of time it would take to access formal financial institutions.



### III.2.1 Factor influencing access to financial sector

#### Eligibility

Product information collected from Rwandan financial institutions suggested that the main requirement for opening a basic entry-level type of account included proof of identity and the provision of two passport photographs. For most financial institutions strict deposit and minimum balance requirements do not apply for these types of products.

As carrying of a national identity card is obligatory for every Rwandan aged 16 years or older, eligibility, like physical access, did not seem to serve as a major obstacle to formal financial inclusion.

- 72% of the adult population was financially included, leaving 28% (1.3 million) financially excluded (Figure 5).
- Financial exclusion has decreased by 46% since 2008 when 52% of the adult population was excluded.
- Geographically
  - Exclusion was higher in areas outside of Kigali City (Figure 7) with most of the excluded adult population (1 million) residing in rural areas
  - In terms of provinces, the Northern Province, with 33.7% of adults excluded, showed the highest level of exclusion (Figure 7)
  - In terms of districts the highest levels of exclusion were illustrated for Nyaruguru, Rusizi, Gakenke and Ngoma, whilst the districts of Nyamasheke, Gicumbi and Karongi also showed exclusion levels significantly higher than the national level of 28% exclusion.

### **III.3.1 Drivers of increased levels of financial inclusion**

To get a better understanding of whether it was an increase in formal financial activities or an increase in informal financial activities that resulted in the significant decrease in financial exclusion since 2008, further analysis focused on the changes in formal and informal inclusion since 2008.

This analysis revealed (Figure 7) that there was an overall increase in financial activity, both formal and informal:

- The proportion of adults who had or used formal financial products or services increased from 21% in 2008 to 42% (1.9 million) in 2012.
- The proportion of adults who were using informal financial mechanisms increased from 39% in 2008 to 58% (2.6 million) in 2012.

Fin Scope subdivides formal financial institutions to the following:

- Commercial banks.
- Non-bank formal financial institutions such as microfinance institutions (MFIs), SACCOs, insurance companies, mobile money service providers, money transfer service providers such as Western Union, etc.

Fin Scope findings, summarized in Figure 10, revealed that the increase in formal financial inclusion was the result of an increase in both the proportion of adults who had/used commercial bank products and services and the proportion of adults who had/used non-bank formal financial services/ products:

- The proportion of adults who had/used commercial bank products increased from 14% in 2008 to 23% (1 million adults).
- A combination of new banks entering the market and greater reach through the deployment of more branches and ATMs explains much of this increase.

- It should be noted that banking figures were also increased by a number of the more established MFIs like Urwego Opportunity Bank, Agaseke Bank and Unguka Bank being registered as commercial banks since 2008.
- The proportion of adults who had/used non-bank products or services increased from 12% in 2008 to 33% (1.5 million adults).
- The increase in uptake of non-bank formal financial services and products was mainly caused by the significant uptake of Umurenge SACCO products and services (Figure 9) that were introduced in 2009 – 22% of adults (1 million) were served by Umurenge SACCOs in 2012
- An increase in uptake of insurance products also contributed to the increase in the proportion of adults served by non-bank formal financial insurance – 7% of adults (330 000) were insured in 2012 compared to less than 3% in 2008 (Figure 9)

### **III.3.2 Overlaps in uptake of financial products/services**

Ultimately, the uptake and usage of a financial service or product depend on a decision made by an individual. Such a decision could be influenced by a range of factors, but it would be safe to assume that individuals would use financial products and services to help them improve their lives and manage their finances better. The levels of usage of financial services at any given time would therefore be the result of the demand for financial services as well as the extent to which financial services available in the market meet the needs of the population.

Having insight into the characteristics and lives of the adult Rwandan population would assist financial service providers to understand how they could better serve the population. Such insight would reveal the factors that could potentially influence adults' decisions on whether or not to use specific products or services. This section of the report is aimed at deepening this understanding.

Consumers generally use a combination of financial products and services to meet their financial needs. Fin Scope 2012 findings indicated that:

- Having/using formal financial products and services alone did not meet the financial needs of most of the formally served population.
  - 66% of formally served adults used informal financial mechanisms to complement the formal products/services they had/used
  
- Having/using bank products and services alone did not meet the financial needs of most of the banked population.
  - Only 17% of banked adults had/used commercial bank services only
  - 59% of banked adults had/used non-bank formal services in combination with their bank services, whilst 64% used informal mechanisms to complement their bank services.

### **III.3.3 Usage of financial products and services**

Although financial sector development interventions are aimed at increased inclusion, the lives of consumers will only be improved by inclusion if the products and services that they take up are used because they meet their financial needs.

Fin Scope Rwanda 2012 illustrated that 42% of Rwandan adults are formally included. The resultant question however became whether this was effective inclusion i.e. whether these products and services were actually used, in this regard:

- 32% of Rwandan adults were using formal financial products in the six months prior to the Fin Scope survey whilst 10% had a formal financial product they hadn't used for six months.
  - 77% of those who had a formal financial product/service had used it in the six months before the Fin Scope 2012 survey;
  - More than half (55%) of those who had a formal financial product used it in the month prior to the Fin Scope 2012 survey;

- 36% of adults had formal savings products; 29% used a formal savings product in the six months prior to the Fin Scope survey; 20% in the month before the survey; and 7% had formal savings products but had not used them in six months;
- 22% of adults had savings products with Umurenge SACCOs; 17% used an Umurenge SACCO savings product in the six months prior to the Fin Scope survey; 11% in the month before the survey; and 5% had an Umurenge SACCO savings product but had not used it in six months;
- 40.2% of adults used informal savings mechanisms; 34% used an informal savings mechanism in the six months prior to the Fin Scope survey; 31% in the month before the survey.

### **III. 4 Impact of financial inclusion on economic growth**

The overarching vision of the sector is to develop a stable and sound financial sector that is sufficiently deep and broad, capable of efficiently mobilizing and allocating resources to address the development needs of the economy and reduce poverty. Through this sector vision, the financial sector plays an important role to the general economic growth of the country. Its contribution is well documented in the past five years. It should be recognized that when financial services reach out to the population broadly and efficiently, they accelerate economic growth, efficient allocation of resources and improved wealth distribution.

This is what Rwanda needs to drive the aspiration of the country's Vision 2020. To achieve a more sustainable economic growth and development, we need a deepened, broadened and developed financial system, well regulated and competitive, an inclusive and financially literate population to accelerate growth. A recent review of Rwanda's financial sector highlighted that although the sector has made remarkable achievement, it still faces major challenges that need addressing to enable the financial sector to contribute meaningfully to the overall performance of the country's economy.

The key challenges identified include; Rwanda's low savings rates as a result of low savings culture, limited access to banking products and services in the rural areas and low incomes that translates into low savings. Another challenge facing Rwanda is the country's inability to

mobilize long term stable financing given that Rwanda's capital market is small and underdeveloped to enable public and private sector access long term financing.

Furthermore, 28% of the Rwandan population have no access to finance and are financially excluded exacerbated by Micro- Finance Institution (MFI)/banks/ SACCOs inability to reach out to the rural areas due to the fact that most of MFIs being concentrated in urban and major cities. There is also a need to create a supporting infrastructure through the expansion of electronic payments systems for credit and debit cards, ATMs, and POS terminals and harmonizing and integration of supporting pillars for the payment and settlement systems with the East African Community (EAC).

There is also a lack of qualified graduates and experienced financial services professionals to meet the needs of the recent development of the financial sector. Another challenge is creating Rwanda an international service center which will require tax harmonization with international and regional countries, entering double taxation agreements, and competitive skills specialists.

This five-year strategy has been developed to address the major challenges in the Rwandan Financial sector covering the period of 2013- 2018 which will enable the country financial sector play a significant role to transform and contribute meaningfully to the development objectives of the country.

Other strategies that helped to push formal inclusion included:

- Expansion of commercial branch network as a result of increased competition: in June 2014, there were more than 500 bank branches, 70% of which were in rural areas;
- Agent banking was enabled in 2012, raising the number of agents to 2,179 end June 2014;
- Mobile financial services, both mobile network operator-based and bank-based grew at high speed since 2012, increasing agents four-fold to 12,828 between 2012 and June 2014, while mobile payment subscribers tripled to 3,187,197 and mobile banking subscribers almost doubled to half a million over the same period.

Rwanda has set an ambitious objective of reaching 80 per cent of formal financial inclusion by 2017, and significant progress has already been made towards achieving this target.

As was mentioned earlier, the goal of financial sector development and increased financial inclusion is to improve the lives of all Rwandans, and more specially to enable the poor to build financial security, manage financial shocks and to invest in opportunities to generate income through access to secure savings facilities and other financial services.

In line with this goal, it would also be any Government's objective to channel as much of the money in a country through the formal financial system in order to enhance the liquidity of financial institutions and ultimately increase their ability to provide credit and better interest on savings.

## **CHAPTER IV: PRESENTATION, DATA ANALYSIS AND RESULT**

### **INTERPRETATION**

In this study we used annual data covering the period from 2008 to 2012, from the National Bank of Rwanda (NBR) statistical bulletin and annual reports. The economic growth variable is GDP at current basic prices. The study uses two independent variables: bank credit to the private sector ratio and to broad money (M2) to GDP as proxies of financial depth. Private credit equals the value of credit by domestic financial intermediaries to GDP ratio.

The first variable is a measure of financial sector activity or the ability of the banking system to provide finance-led growth. The supply of credit to the private sector is important for the quality and quantity of investment (Demetriades and Hussein, 1996).

This ratio also stresses the importance of the role played by the financial sector, especially the deposit money banks, in financing the private economy. It isolates credit issued to the private sector from credit issued to governments, government agencies, and public enterprises. Also, it excludes credits issued by the Central Bank (Levine et al. 2000).

The underlying assumption is that credit provided to the private sector generated increases in investment and productivity to a much larger extent than the credits to the public sector. It is also argued that loans to the private sector are given under more stringent conditions and that the improved quality of investment emanating from financial intermediaries' evaluation of project viability is more significant for private sector credits (Levine and Zervos, 1998).

Gelb (1989), World Bank (1989), and King and Levine (1993) use the ratio of broad money to GDP for financial depth. In principle, the increase in the ratio means the increase in financial depth.



We estimate the impact of credit to private sector on economic growth, where:

$$Y = F(X_1, X_2) \quad \text{Eq. (1)}$$

$$GDP = F(BCPS, M2)$$

Using  $t$  to denote time period (years), the model can be written as follows:

$$GDP_t = F(BCPS_t + M2_t)$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \quad \text{Eq. (2)}$$

We specify the above model linearly in the form of an equation

$$GDP_t = \beta_0 + \beta_1 BCPS_t + \beta_2 M2_t + U_t \quad \text{Eq. (3)}$$

GDP = Gross Domestic Product at current basic prices.

BCPS = Bank Credit to the private sector to GDP

M2 = Broad money to GDP

$\beta_0$  = Constant

$\beta_1, \beta_2$  = Coefficients of the explanatory/Independent variables

$U_t$  = Stochastic or error term

All the variables are expressed in their logarithms

$$\ln GDP = \beta_0 + \beta_1 \ln BCPS + \beta_2 \ln M2 + U_t$$

The following are a priori expectations of the coefficients of the model.

$$\beta_1, \beta_2 > 0$$

## **IV. 1 Estimation Techniques**

### **IV.1.1 Unit Root test for Stationarity**

The prerequisite for co-integration test is the stationarity of each individual time series over the same time period. Hence, before turning to the analysis of the long-run relationships between the variables we check for the unit root properties of the single series, as non-stationary behavior is a prerequisite for including them in the co-integration analysis. If the time series are stationary in their first differences, then they are said to be integrated of order one, i.e.,  $I(1)$ ; if stationary in their second differences, then they are integrated of order two, i.e.,  $I(2)$ .

The order of integration of the variables is investigated using the Augmented Dickey-Fuller (ADF) [Dickey and Fuller, 1981] and Phillips-Perron (PP) [Phillips and Peron, 1988] unit root tests for the presence of unit roots. Vector Auto regression (VAR) The general idea consists of assuming that financial development improves the efficient allocation of resources, which implies higher long-run economic growth.

These theoretical predictions are confirmed by a large body of empirical evidence. Multivariate analysis investigates dependence and interactions among a set of variables in multi-values process. One of the most powerful methods of analyzing multivariate time series is the vector Auto regression (VAR) model used in this study. It is a natural extension of the univariate autoregressive model to the multivariate case.

## IV. 2 Data Analysis

### IV.2.1 Stationarity Test

Unit root tests are conducted for the full sample period in order to determine the stationarity characteristics of individual series. These tests are summarized in the tables below:

**Table 3: Augmented Dickey Fuller Test**

Variables	Lag length	ADF values at level	Critical values (at 5%) at level	ADF values at first difference	Critical values (at 5%) at first difference	Order of integration
CPS	0	0.21	-2.94	-3.41*	-3.22	I(1)
M3	4	-2.75	-3.56	-6.57*	-2.95	I(1)
NGDP	1	-2.51	-2.95	-6.52*	-2.95	I(1)

**NB: An asterisk indicates the rejection of null hypothesis at the 5% levels**

**Table 4: Phillips Perron Test**

Variables	ADF values at level	Critical values (at 5%) at level	ADF values at first difference	Critical values (at 5%) at first difference	Order of integration
CPS	0.44	-2.95	-6.25*	-2.95	I(1)
M3	-1.06	-2.95	-7.05*	-2.95	I(1)
NGDP	-3.16	-3.54	-10.24*	-3.55	I(1)

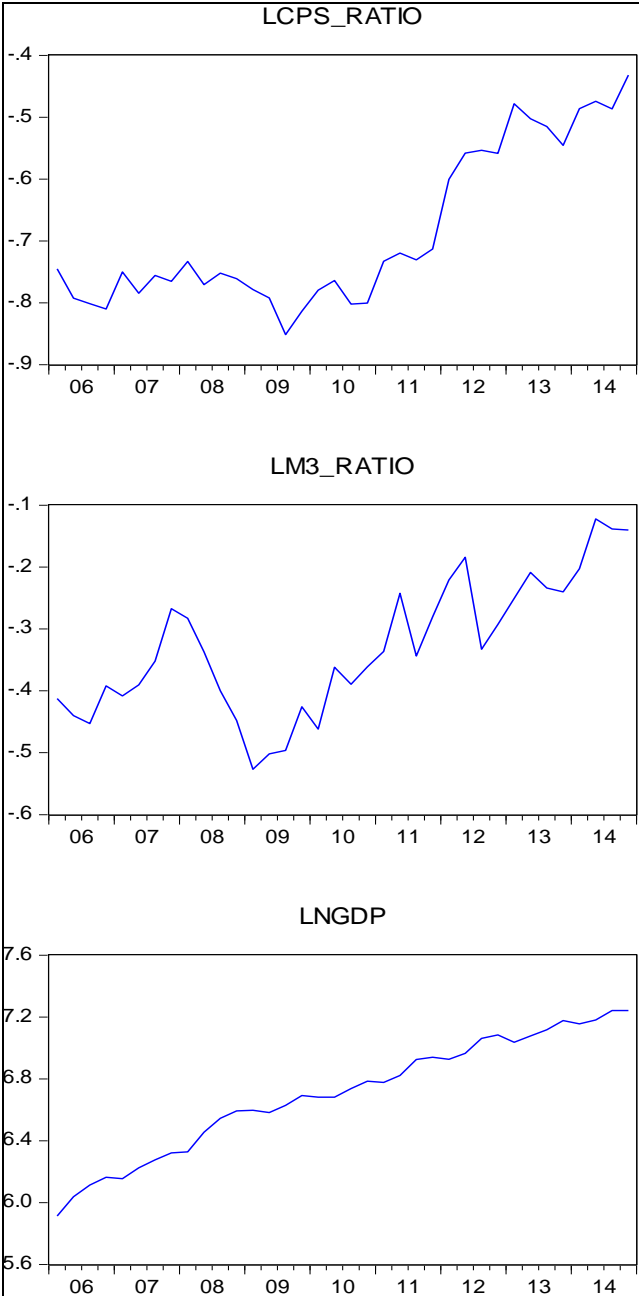
**NB: An asterisk indicates the rejection of null hypothesis at the 5% levels**

Using Augmented Dickey Fuller (ADF) tests, the unit root cannot be rejected at 5% for all variables at level. For all variables the ADF t-statistic is greater than the test critical values at 5% thus non-stationary at level.

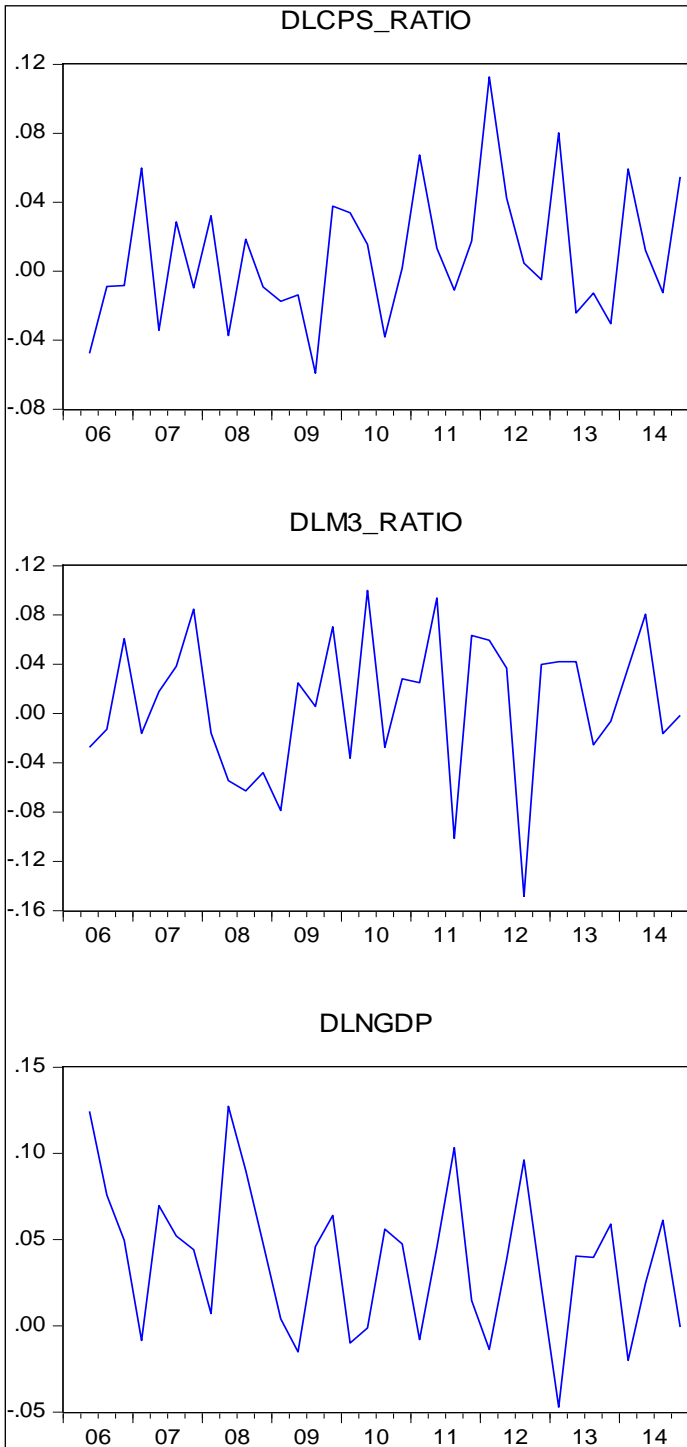
All variables become stationary after first difference; their ADF t-statistic values are less than the test critical values at 5%. The same results with Phillips Perron test for all variables.

We can also observe that situation of non-stationarity at level and stationarity at first difference through the graphs below:

**Figure 1: Variable at level**



**Figure 2: Variables at first differences**



## IV. 2.2 Lag Selection

An important aspect of empirical research based on VAR is the choice of the lag order, since all inference in the VAR model depends on the correct model specification. Hence, the optimal lags required in the co integration test were chosen using the most common traditional information criteria being the Akaike Information Criteria (AIC), Schwarz Criterion (SC), Hannan and Quinn's (HQ) and the likelihood ratio (LR).

**Table 5: Lag selection results**

VAR Lag Order Selection Criteria

Endogenous variables: LNGDP LCPS\_RATIO

LM3\_RATIO

Exogenous variables: C

Date: 07/02/15 Time: 10:51

Sample: 2006Q1 2014Q4

Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	75.66989	NA	2.45e-06	-4.404236	-4.268190	-4.358461
1	195.3290	210.3099	3.01e-09*	-11.11085	-10.56666*	-10.92774*
2	199.7207	6.920281	4.05e-09	-10.83156	-9.879233	-10.51113
3	213.4986	19.20556*	3.15e-09	-11.12113*	-9.760664	-10.66337

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

A reasonable strategy on how to determine the lag length of the VAR model is to fit VAR (p) models with different orders  $p=0, \dots, p_{\max}$  and choose the value of p which minimizes some model selection criteria.

The Akaike information criterion test gives the lag=3 while the Schwarz information criterion and the Hannan-Quinn information criterion give the lag=1

### **IV.3. Estimate results**

#### **IV.3.1 Impulse Response (IR)**

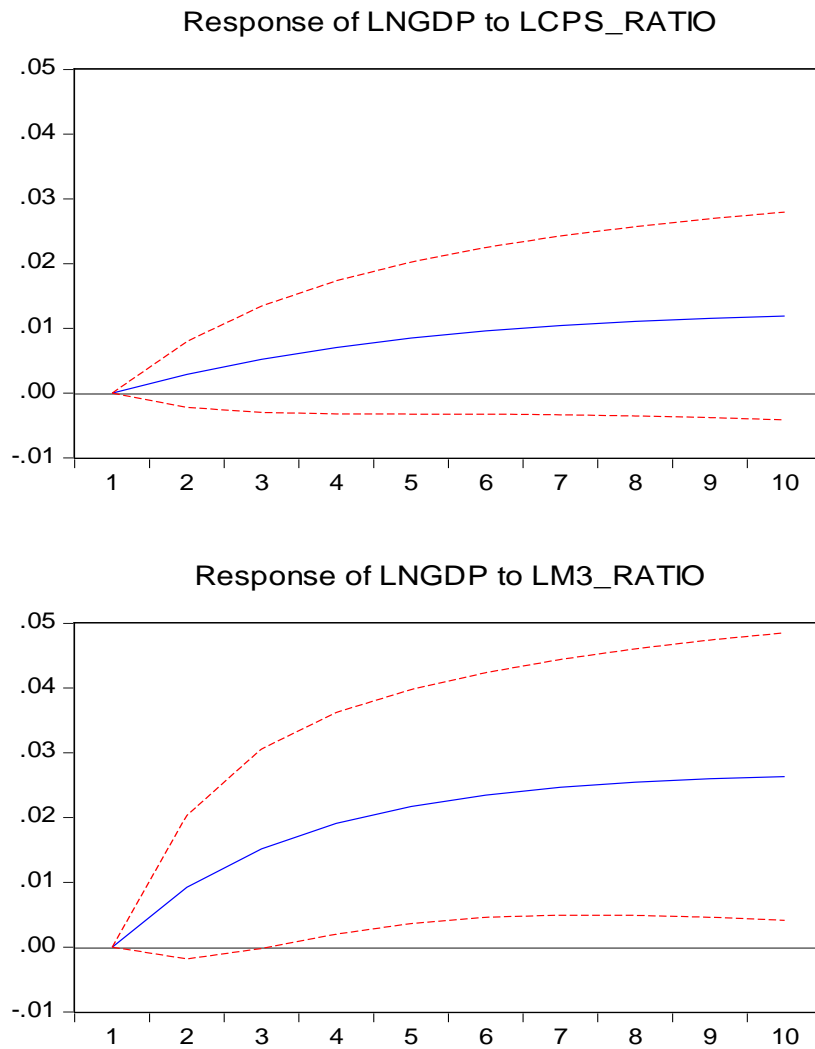
A shock to the  $i$ -th variable not only directly affects the  $i$ -th variable but is also transmitted to all of the other endogenous variables through the dynamic (lag) structure of the VAR. An impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables.

If the innovations are contemporaneously uncorrelated, interpretation of the impulse response is straightforward. The  $i$ -th innovation is simply a shock to the  $i$ -th endogenous variable.

Impulse response functions trace the effects of a shock to one endogenous variable on to the other variables in the VAR.

We did the Impulse Response test to analyze the effect of a shock on the explanatory variables to the growth domestic product. The results of impulse response test are shown in the graphs below:

**Figure 3: Impulse response of Credit to private sector (CPS) and broad money (M3) to the Response to Cholesky One S.D. Innovations  $\pm 2$  S.E.**



The red dash line represents the confidence interval band and the blue line in middle represents the line of response.

The confidence interval band for the line of response should be one side (preferably above the zero line) in order to have a significant response.



The graphs above show that only the shock on M3 significantly impact the NGDP.

The NGDP reacts on M3 shock after three quarters and the shock becomes non-significant after 15 quarters (where the red line meets the zero line). The shock from CPS is non-significant.

The results of the impulse response prove the impact of the financial sector development on the economic growth in Rwanda.

We proceed with the causality test to check whether there exists a causality relationship between the variables and the results are given in the table below.

### IV.3.2 Granger Causality Test

**Table 6: Results of Granger Causality Test**

Pairwise Granger Causality Tests

Date: 07/02/15 Time: 10:59

Sample: 2006Q1 2014Q4

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LCPS_RATIO does not Granger Cause LNGDP	34	1.32515	0.2814
LNGDP does not Granger Cause LCPS_RATIO		2.57530	0.0934
LM3_RATIO does not Granger Cause LNGDP	34	3.45910	0.0449
LNGDP does not Granger Cause LM3_RATIO		2.34424	0.1138
LM3_RATIO does not Granger Cause LCPS_RATIO	34	1.75981	0.1900
LCPS_RATIO does not Granger Cause LM3_RATIO		1.41299	0.2597

With GDP as the dependent variable, there is no causal relationship between the credit to private sector and the Growth Domestic Product while there is a causal relationship between the broad money and the GDP.

## **CHAPTER V: CONCLUSION AND RECOMMENDATIONS**

This chapter presents the summary of the findings of this study, challenges, perspectives and policy recommendations for moving towards financial inclusion as a strategy for economic growth.

### **V.1 Conclusion**

The aim of this study was to assess if the good progress achieved in Rwanda in terms of financial inclusion has contributed to support economic growth.

This study was built on two main questions stated as following:

1. Does the level of financial inclusion matter for Rwandan economic growth?
2. Is there a bi-directional influence between financial inclusion and economic growth?

Our hypotheses were these:

- There is no causal relationship between financial inclusion and economic growth in Rwanda?
- There is bio- directional causal relationship between financial inclusion and economic growth in Rwanda?

This study has attempted to examine the impact of bank credit on economic growth in Rwanda. The study used time series data over the period 2008 to 2012, which represented 5 years. The analysis was based on Vector autoregressive (VAR) econometric model for time series data in which current GDP was used as dependent variable and bank credit to private sector and broad money (M3) were used as financial indicator and financial depth respectively.

Based on the results of our study there is strong evidence that a significant and positive relationship exist between bank credit to the private sector and gross domestic product (GDP).

The VAR granger causality test result also indicates no causal relationship with GDP as the dependent variable but there is a unidirectional causal relationship when credit to private sector is used as the dependent variable. The direction of causality is from gross domestic product to bank credit to private sector.

GDP per capita has a positively and highly significant correlation with the financial inclusion. This result is economically expected as other evidence suggests. Thus, we can conclude that the higher the income level, for individual and country levels, the higher the financial inclusion. Unemployment is negatively and significantly associated with financial inclusion. Those unemployed and irregularly employed are less likely to engage in the financial system. Similarly, higher the unemployment rate, the higher the likelihood of financial exclusion.

## **V.2 Challenges to financial inclusion**

A recent review of Rwanda's financial sector highlighted that although the sector has made remarkable achievement, it still faces major challenges that need addressing to enable the financial sector to contribute meaningfully to the overall performance of the country's economy.

The key challenges identified include: Rwanda's low savings rates as a result of low savings culture, limited access to banking products and services in the rural areas and low incomes that translates into low savings. Another challenge facing Rwanda is the country's inability to mobilize long term stable financing given that Rwanda's capital market is small and underdeveloped to enable public and private sector access long term financing.

Rwanda is also challenged with low levels of financial literacy that constrain the demand for and use of financial services. Lack of access to financial products or failure to use them even when they are available; People are unfamiliar with basic financial products and tools such as checking accounts, automated teller machines, and credit & debit cards. A World Bank diagnostic review of financial literacy found that 58% of adult's fear that banks will seize their property if they borrow from them, and around 60% expressed the need for more information on how to keep money safe, how credit works, and how to spend money wisely.

### **V.3 Perspectives to attain financial inclusion and economic growth**

Rwanda has set an ambitious objective of reaching 80 per cent of formal financial inclusion by 2017, and significant progress has already been made towards achieving this target. Programs such: Financial Sector Development Programs (FSDP I& II) that seeks to develop a stable, sound and efficient financial sector. The second Financial Sector Development Program will also include a National Financial Education Strategy (NFES) that will be integrated into the school curriculum and rolled out in communities to equip Rwandans with the knowledge, skills and belief to make and exercise informed, confident and timely money management decisions.

Rwanda has made significant strides, doubling formal inclusion from 21% to 42%, and reducing total exclusion from 52% to 28% in five years, between 2008 and 2012. Plans for the next five-year period are to again double formal inclusion to 80% by end of 2017.

Expansion of commercial branch network as a result of increased competition: in June 2014, there were more than 500 bank branches, 70% of which were in rural areas;

Agent banking was enabled in 2012, raising the number of agents to 2,179 end June 2014;

Mobile financial services, both mobile network operator-based and bank-based grew at high speed since 2012, increasing agents four-fold to 12,828 between 2012 and June 2014, while mobile payment subscribers tripled to 3,187,197 and mobile banking subscribers almost doubled to half a million over the same period.

### **V.4 Recommendations**

As recommendations and ways forward: Filling the data gaps to inform better decisionmaking. Rwanda is a relatively small country with a fairly straightforward financial system structure and big financial inclusion goals for the future (to reach 80% by 2017), is an excellent example of how sub-national data can provide us with a clearer picture of financial inclusion.

At the aggregate level, we see that Rwanda is well on the path to financial inclusion. In detail, we still observe low numbers of uptake on credit products and lingering issues with financial education.

To achieve a more sustainable economic growth and development, Rwanda needs a deepened, broadened and developed financial system, well regulated and competitive.

Creation of a supporting infrastructure through the expansion of electronic payments systems for credit and debit cards, ATMs, and POS terminals and harmonizing and integration of supporting pillars for the payment and settlement systems with the East African Community (EAC).

Production of more qualified graduates and experienced financial services professionals to meet the needs of the recent development of the financial sector.

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## **APPENDICES**

**Quarterly data used in VAR model (in''000'' Rwf)**

<b>Quarter/Year</b>	<b>CPS</b>	<b>NGDP</b>	<b>M3</b>
Q1 2006	175.64	370.00	244.90
Q2 2006	189.65	419.00	269.83
Q3 2006	202.77	452.00	287.40
Q4 2006	211.31	475.00	320.97
Q1 2007	222.45	471.00	313.18
Q2 2007	230.46	505.00	341.84
Q3 2007	249.84	532.00	374.19
Q4 2007	258.61	556.00	425.65
Q1 2008	268.99	560.00	422.05
Q2 2008	294.32	636.00	453.95
Q3 2008	328.11	696.00	466.57
Q4 2008	341.03	730.00	466.40
Q1 2009	336.50	733.00	432.86
Q2 2009	326.93	722.00	437.06
Q3 2009	322.67	756.00	460.31
Q4 2009	357.26	806.00	526.58
Q1 2010	365.92	798.00	502.77
Q2 2010	371.19	797.00	554.94
Q3 2010	377.95	843.00	571.06
Q4 2010	397.07	884.00	615.94
Q1 2011	421.39	877.00	626.50
Q2 2011	447.00	918.00	720.25
Q3 2011	490.26	1018.00	721.79
Q4 2011	506.27	1033.00	780.35
Q1 2012	558.96	1019.00	816.92
Q2 2012	606.05	1059.00	880.82
Q3 2012	670.39	1166.00	835.99
Q4 2012	682.54	1193.00	890.16
Q1 2013	705.42	1138.00	885.62

Q2 2013	717.01	1185.00	961.89
Q3 2013	736.63	1233.00	975.76
Q4 2013	757.98	1308.00	1028.69
Q1 2014	788.29	1282.00	1046.61
Q2 2014	817.81	1314.00	1162.72
Q3 2014	858.74	1397.00	1216.23
Q4 2014	906.32	1396.00	1213.50

**Source: National Bank of Rwanda**