THE CAUSAL RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE FROM EAST AFRICAN COUNTRIES

THE CAUSAL RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE FROM EAST AFRICAN COUNTRIES

By
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A Dissertation Submitted in Partial Fulfilment of requirements for the Degree of Master of Science in Accounting and Finance (Msc. A&F) of Mzumbe University

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CERTIFICATION

I, as the supervisor to the researcher, do certify that I have read and hereby recommend for acceptance by the Mzumbe University, a research report entitled causal relationship between Financial Development and Economic Growth: Evidence from East Africa Countries, in partial fulfillment of the requirements for award of the Master of Science in Accounting and Finance (MSc. A&F) of Mzumbe University

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(Dr. Cosmas Mbogela) Major Supervisor

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External Examiner

Accepted for the Board of ……

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CHAIRPERSON, FACUTY/DIRECTRORATE BOARD

DECLARATION

I Dorothy Haki, declare that this research report entitled "The causal relationship between Financial Development and Economic growth: Evidence from East Africa Countries" is my original work and has never been produced by anyone else except where otherwise identified by way of reference

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Date ……

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DEDICATION

This research is dedicated to my sister Mrs. Asteria Mutolela whose guidance, support and encouragement has made me what I am today. Also my sons Collins and Paschal, my daughters Neema and Anisia, May mighty God be with you all

ABBRIVIATONS

ADF - Augmented Dick Fuller

AGR - Annual Growth Rate

COEF - Coefficient

DC - Domestic credit to Private Sector

EG - Economic Growth

ERR - Standard error

FD - Financial Development

FI - Financial Institution

FM - Financial Markets

GCT - Granger causality test

FSD - Financial system deposits

GDP - Growth Domestic Product

GGM - Generalised Moment Method

IMF - International monetary Funds

LL - Liquidity Liabilities

PP - Phillip Perron

P-VALUE - Probability value

R2 - Coefficient of Determination

VAR - Vector Auto regressive

ABSTRACT

This paper examines the causal relationship between financial development and economic growth in three countries of east Africa (Tanzania, Kenya, and Uganda) over the 1987-2013 periods

The study used annual growth rate as proxy of economic growth, thus dependant variable. Financial development was determined by three proxies and therefore independent variables, these proxies are; Domestic Credit to Private Sector, financial system deposits as the ratio of total financial system deposits and Liquidity liabilities that used to measure economic growth.

The research deployed quantitative research approach analyzing by using stata program and the study used only secondary data .The causal relationship between financial development (FD) and economic growth (EG) was examined by using Vector autoregressive VAR model and Granger causality test. Phillips-Perron (PP) tests and augmented Dick fuller test were used to test for unit root (non-stationary)

This study found that there is a bidirectional relationship between financial development and economic growth for Tanzania, for Kenya the result revealed unidirectional relationship running from economic growth to financial development and for Uganda the causal relationship is only financial development which leads Economic growth. The different results indicates that each east African country has its own polices, regulations and laws that differ from another country. Therefore the differences can be removed by making sure that laws, policies and regulations formulated by Policy makers are the same in all east African countries

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CHAPTER ONE

1.1 BACKGROUND TO THE RESEARCH PROBLEM

Financial development is viewed as one of the most important determinants of economic growth. But also economic growth is seen to be important in financial development. Financial development can take a leading role in economic growth or can lead to expansion of economic needs. Economists and policy makers are more concern with the relationship between financial development and economic growth (Abubakar, 2011). This has lead to many researchers to examine the relationship between financial development and economic growth.

Most of the economists suggest that financial development contributes to economic growth in many ways. This can be agreed due to the reasons that most of the functions performed by financial development such as financial institutions (FI) support the growth of economy. For example Savers may have small amounts of money required to lend to borrowers while borrowers wish to borrow large amounts of money for their investment. This can be difficult for borrowers to achieve without FIs. But through the FI that accept small amounts of deposits and organize them to large amounts thereby providing large funding to borrowers substantial investment projects get enhanced

In contrast, Lucas (1988) and Stern (1989) found that financial development does not contribute to economic growth thus there is no relationship between these variables. Lucas (1988) continued arguing that finance was overstated to be the main factor of economic growth and any plans that intended at supporting the development of financial system can misuse the available resources, Thus relationship between financial development and economic growth has resulted in different views on how to improve the economic growth through financial development and vice versa and therefore no common agreement to how financial development affects or is being affected by economic growth.. Therefore this study intend at contributing to these arguments

On the other hand, some of researchers suggest that the development of financial system depends on improved economic growth. Robinson (1952) continued saying that when economy growth of the country improves leads to development of financial sector. This finding was supported by (Jung, 1986, Boulika and Trabelisi, 2004 Goldsmith, 1969 and Kar and Pentecost 2000 but Islam, Habib and Khan 2004; Guryay, Safkli and Tuzel 2007) confirmed one way direction running from economic growth to finance. According to Padilla and Mayer (2002), Countries whose economies grow faster, are required to invest more in order to improve the financial system for steady economy

Financial development as defined by Levine (2004) that is a situation where financial instruments, markets and intermediaries improve thereby reducing the effects of information enforcement and transaction costs and therefore do a corresponding better job at carrying out the financial functions which include producing information; pooling savings; and easing exchange. Thus, financial development helps the improvement of the financial system in carrying out various functions. These functions lead to the influence of savings and investment decisions, thereby contributing to the growth of economy. However, there are differences in how well financial systems provide these functions.

Financial development leads to economic growth by motivating investment or projects to perform efficiently. The efficiency effect suggested that laws and regulations in financial sector make sure that there is transparency and appropriate reporting in financial sectors. This ensures confidence to investors and therefore catches the intention of foreign and domestic investors. Also financial sectors help to allocate available financial resources to more profitable investments. This indicates that financial development and economic growth have a positive relationship (Onuonga 2014)

Graff (1999).defined financial development as the increase in the level of financial services of financial institutions and other financial sectors as well as financial transactions on capital markets which encourages development of economic growth.

According to Levine (2005), who described that economic growth can be influenced by financial development due to the reason that financial development (financial Institutions) perform several functions which are (i) easing the exchange of goods and services through the provision of payment services, (ii) mobilising and pooling savings from a large number of investors, (iii) acquiring and processing information about enterprises and possible investment projects, thus allocating savings to their most productive use, (iv) monitoring investment and carrying out corporate governance, and (v) diversifying, increasing liquidity and reducing risk. Each of these functions can influence saving and investment decisions and hence economic growth. Since many market frictions exist and laws, regulations, and policies differ markedly across economies and over time, improvements along any single dimension may have different implications for resource allocation and welfare depending on other frictions in the economy

The relationship between financial development and economic growth is the main concern to both economists and policy makers. Previous researchers such as Odhiambo (2010), Guryay (2007), Kar and Pentecost (2000), Pradha (2009), Sinha and Macri (2001) and Vazakidis and adamopoules (2009) examined the relationship and causal relationship between financial development and economic growth but each got different result

The results obtained by King and Levine (1993) give evidence that economic growth tends to grow faster in developed countries that have financial system advanced, In their study found that the depth financial development contributes positively to the growth of economy. Their examination done from 1960 to 1989 in 80 (eighty) countries, revealed that the size of the financial sectors is positively related by economic growth. The researchers continued arguing that the positive relationship between the two variables can be due to the fact that developed countries have many financial transactions due to larger financial institutions and therefore faster growing of the related country.

Therefore, from King and Levine (1993) arguments, it can be seen that the outcome of the study does not prove that it is financial development that contributes the

economic growth. This is because the increase of the size of financial development in one year may be due to the improvement of economic growth in the previous year. The relationship between financial development and economic growth also has been suggested by Beck, Levine and Loyaza (2005) as well as Benhabib and Spiegel (2000) that the effect of financial development to economic growth is stronger than the effect of economic growth to financial development.

The earlier studies concerning the relationship between financial development and economic growth have setbacks which can be seen in many ways. For instance the positive relationship between financial development and economic growth can be due to different reasons, for example, the increase in the output leads to the requirement of financial services to increase also, and therefore positive improvement on financial development. Other suggests that economic growth contributes to financial development. Therefore the need of more study on the nature of relationship and the causal direction between financial development and economic growth

The causal direction between financial development and economic growth is uncertainty. According Guryay, Sakli and Tuzel (2007) who suggested that, it is clear to observe opposite relationship ether positive, negative or very weak relationship between financial development and economic growth. Therefore, it is better to determine the causal relationship between financial development and economic growth because this helps policy makers to make decision for the future improvement regarding the causality direction between these variables

Evidence of the researches conducted concerning the direction of causality relationship of the two variables, the financial development and economic growth found a mixture of findings. Most of their results of findings are conflicting, leaving many questions among researchers and economists of what exactly the causal relationship of these variables. For example, Odhiambo (2007)) found that financial development leads to economic growth, Odhiambo (2011)) found that economic growth leads to financial development and Odhiambo (2005) found a bidirectional causal relationship between financial development and economic growth, therefore

more study need to be done to examine the causal relationship between financial development and economic growth.

Although the examination of the relationship between financial development and economic growth are concern to both countries either developing countries or developed countries but in all cases the problem of causal relationship still exist, no solution that have been achieved as a proof regarding the direction of causality. As seen from different previous researchers concerning the topic, the direction of the causality is still ambiguous of which variable causes the other. Different outcomes from previous researchers have been observed. According to the conclusion done by some of researcher such as Robinson (1952) and Goldsmith 1969 that improvement of financial development is due to the development of economic growth

The earlier studies concerning this relationship experienced different limitations. Some of researchers used the cross-sectional data to examine the relationship, but these types of data did not address well the problem of the country and the other used time series data and also some used panel data. Also methods of analysis differs which leads to different outcomes thereby becoming difficult to make conclusion regarding the nature and causal relationship between financial development and economic growth in the country under study.

The causal relationship can differ in the same country when different proxies are used. for example in Tanzania one results showed that the causal runs from economic growth to financial system , but some of researchers result revealed that there is a bidirectional relationship and other results revealed the unidirectional relationship running from financial development to economic growth Odhiambo (2011). Also the same results were observed from Botswana country where Eita and Jordaan (2007) examined the causal relationship between financial development and economic growth in Botswana from year 1977 to 2006, the researchers used Granger causality test to determine the causal relationship through co integrated VAR methods and found that financial

development causes economic growth in Botswana. But Akinboade (1998) for Botswana found that there is bidirectional causality between financial development and economic growth although used different proxies and different econometric technique (cointegrated vector autoregression method)

Although many empirical studies were done by well-known economic researchers, there has been no any agreement about how financial development affects economic growth. This has caused different views on how financial development and economic growth relates. This study is therefore, aimed at examining this relationship in order to come up with the actual result which will contribute to the knowledge of how financial development affects economic growth or vice versa.

1.2 Statement of the Problem

Financial development plays an important role in determining the condition of an economic growth, stated by Abubakar Mohamed (2011). The experience from the recent global financial crisis has shown that an economy with a weak financial system is bound to fall, More efforts has been made by different countries to improve the financial system but still the level of economic growth is low. For example in Tanzania since 1990s, the government has implemented a number of policy and institutional reforms in order to strengthen the development of financial institutions but still the rate of economic growth is low,

Despite of the importance of financial system advances to economic growth still, the results found by different researchers who examined this relationship were contradicting. Some of the studies support the importance of financial development to economic growth for example, Levine (2004), Odhiambo (2007), Gupta (1984), Abu-Bader and Abu-qurn (2005), Ghali (1998). But the other study for example conducted by Odhiambo (2011), Chimobi (2010) and Guryay (2007) found that financial development is influenced by economic growth. Also Odhiambo (2005), Akinboade (1998), Jung (1996), Pradhan (2009), Calderon and Liu (2003) found that there is a bidirectional causal relationship between financial development and economic growth.

Another difference is the use of different types of data, some of researchers employed panel data and found positive effects of financial development on economic growth. Respectively King and Levine (1993), Khan, S.M & Senhadji (2000) , Benhabib and Spiegel (2000), and Levine (2000). But using time series data the results were different. For example Demetriades and Hussein (1996) used time series data the result did not confirm that financial development influences economic growth. Calderon and Liu (2003) used cross sectional data but also the result were different. Odedo (1996) in his study suggested that the relationship between the two variables differs from country to country and over time and also Odhiambo (2011) suggested that the relationship between financial development and economic growth may be sensitive to the proxy variables used to represent financial development

From different studies that had been conducted regarding the relationship between these variables do not show empirical agreement among the researcher's outcomes on the importance of financial development to economic growth and therefore giving a good reason for more study to be conducted in this field. Therefore, this study aims at satisfying these differences by examining the causality relationship between financial development and economic growth in the east Africa countries.

1.3 Main objective

The main objective of this study was to examine the causal relationship between financial development and economic growth in east African countries

1.4 Specific Objectives of the study

The report was guided by the following specific objectives

- To examine the relationship between financial development and economic growth
- To determine the causal relationship between of the selected proxies of financial development and the proxies of economic growth

1.5 Research Questions

The major questions addressed in this report concerned the relationship between financial development and economic growth in east Africa countries was follows:-

- What is the relationship between financial development and economic growth?
- Is there a causal relationship between financial development and economic growth?

1.6 Significance of the Study

The findings prove to be applicable to knowledge after the study for the following reasons:

The finding will help to provides appropriate information regarding on how financial development and economic growth relates to each other

Through recommendations of the study policy makers will be able to find a suitable way by formulating policies that will support the improvement of financial development which will lead to economic growth

The finding also will give out the basic way of formulating a useful new idea or to be used as a reference work by the future researchers.

1.7 Scope of the study

This study covers a period of 27 years (1987-2013). The study is limited to three east African countries: Tanzania, Kenya and Uganda, The choice of data range was due to the availability of data and the purpose for which the research report is intended. Also the study used Time series data which are secondary data of each country from different sources, such as World Bank, economic indicators records and IMF

1.8 Organization of the study

To achieve the objectives of the report, the work has been divided into six chapters Chapter one gives the introduction of the this report which explains the background of the study, statement of the problem, objectives of the report, questions of the

report, significance of the study, scope of the study, limitations of the study and organization of the study itself.

Chapter two provides results of related literature of the relationship between financial development and economic growth by providing research proof conducted by various researchers from different countries and theoretical study concerning the relationship between financial developments

Chapter three explains methodology of the study. It consists of introduction, Types and sources of data, Sample, variable definitions, econometric model and data analysis.

Chapter four is concerned with presentation of finding. Chapter five provides a section for data analysis and interpretation of results, including discussion of findings

The final chapter which is chapter six presents conclusion of observations on the research report. It provides sections for a summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of previous works carried out by economic and financial researchers in respect of the causal relationship between financial development of a country and economic growth into two categories; theoretical and empirical evidence

2.2 Theoretical study

The relationship between financial development and economic growth has been examined widely by different researchers, but with conflicting results. There is a growing body of theoretical linking financial sector development and economic growth. The recognition of a significant and positive relationship between financial development and economic growth dates back to Schumpeter (1912), who states that financial markets play an important part in the growth of the real economy.

Also FI manage risk by making a large number of loans, most of which might be good and only few might turn bad. FI can minimize risk by diversifying its lending across different types of assets/ securities. Financial markets provide liquidity thereby providing an opportunity for investors to quickly convert their claims into cash without extensive loss of value or risk and well functioning financial markets are key factors in producing high economic growth but poorly performing financial markets are reason that many countries in the world remain desperately poor

According to Onuonga (2014), improved financial system can support or contribute to the efficiency and effectiveness of financial development and also supports financial improvement, thus contributing to the economic growth. Onuonga continued suggesting that financial development is said to improve, when the addition of financial institutions increases and when the strength of the financial sectors increases, also when there is an increase of fund that that have been

transacted by financial institutions within the country and when there is an increase in number of the services delivered and the increase of financial institution in a country within a specified period and when financial development improves by becoming more efficient

Meier (1991) suggested that even if the economy of a country improves, still there is a need for financial institution to allow available savings to be used for investment suitably and make sure that the available resources are directed to the most effective purposes. It is important for the required sector in developing countries to collect the savings from individuals and be able to invest within the country. It is easy for such sector or agencies to allow the saved amount and be able to invest efficiently. If the financial institution is improved, the task of monitoring can be assigned or delegated to financial intermediaries .Delegation helps to speed up economic growth by decreasing transaction costs and also more savings would be allocated to other investment that creates technological improvement. Financial sector reduces transaction cost that can hinder economic growth Andersen (2003)

According to Levine (2005), who described by proposing that economic growth can be influenced by financial development due to the reason that financial development(financial Institutions) performs several functions which includes; financial development enables the services rendered and exchange of goods to be achieved at low cost and easily, Helps saving to be mobilized and be collected from different investors that are being accumulated for borrowers need , also financial development help Providing information for better allocation of capital and firms in order to invest in profitable projects, through financial development ,the performance of projects are being observed and appropriate practice of corporate governance are being achieve thereby leading to achievement of efficiency outcomes , and Helps investors to invest in more than one project which helps to reduce risk. The researcher continued suggesting that when these functions are performed well many savers will be attracted to deposit their money in different financial institution and also the interested investors will be able to make reasonable decision. All these in turn lead to economic growth

2.3 The five functions through which finance leads growth

The five channels as presented by Levine 2005 that finance influence economic growth are explained in details below

2.3.1 Providing information for better allocation of capital

The intermediation of savings into investments depends on the quality and quantity of information available to individual savers, but it is very costly for individuals to get information required for their investment. Information collected by financial intermediaries is more profitably and easily acquired than individuals. Financial intermediaries help the allocation of the available resource efficiently to firms or industries that are more productive.

The cost of acquiring information by individual savers for their project is very high which can cause the project that has high return not to be financed. But through financial intermediaries that acquire and assess information that enables allocation of available resources to more profitable project. Andersen (2003) in his study indicated that when allocations of savings are improved through different projects leads to enhancement of growth.

Levine 2005 also suggested that before making investment decision it is better to know costs that are connected with the assessment of firms, managers and the condition that persist in the available markets, because sometimes these costs are large enough to discourage investors. It is costly for individuals to have that information required to make decision. Most of individual savers will not want to invest in a project that they have or they do not have enough and consistent information. Investor need to have reliable information about the project or the firm that they intend to invest according to the available market. This helps to make reasonable decision by putting large capital to the most profitable firms or projects. Boyd and Prescott (1986) suggested that through financial institutions investors can obtain reliable information at low cost and therefore proper allocation of the available resources

Financial intermediaries are the very important for investors or individuals in making positive decisions. Investor need to be aware of fixed costs that are connected with assessing the value of the firm including the performance of managers according to the situation of prevailing economic growth. According to Boyd and Prescott (1986), financial intermediaries perform activities similar to Known Banks, for example it accepts small amount from individual savers for making loans. According to Allen (1990) who found that financial intermediaries are there to produce reliable information regarding various firms which will be useful to individual savers at low cost

Information produced concerning the project, the situation of current economy, and the available financial institutions, also about the managers should be improved in order to make contribution on rapid economic growth. Since the available resources are scarce and the requirement of such resources are high, therefore financial intermediaries can give reliable information concerning the firm or project by considering funding those profitable project or firms thereby encourage efficient allocation of funds as according to Greenwood and Jovanovic (1990). Financial institution can produce better information, efficient allocations of available resource and be able to contribute to economic growth at low cost. This encourages more individual to support financial intermediaries by depositing their small amount that are accumulated for large investment.

2.3.2 Monitoring of firms and make use of corporate governance

Due to the fact that shareholders can keep an eye on how managers in the firm use the contributed fund thereby applying corporate governance. This encourages them to provide more funds without any fear of loss. Effective corporate governance encourages managers to use and allocate the available resources efficiently thereby improving corporate governance, which leads the financial intermediaries to have a positive outcome on economic growth.

Financial sectors uses corporate control and serves in observing of projects which aim at lowering risk and reduce misuse of available resource .According to Andersen

who suggested that the established financial institutions can monitor investment for investors thereby reducing repetition of cost for monitoring that could investors incur when conducting their own individual monitoring

Corporate governance is essential for improvement of economic growth and it is very important factor for development of financial institutions. Through corporate governance providers of funds or resources to firms can observe the firms operation effectively and being aware of how firms use those resources has implications on savings as well as allocation of resources. The idea of the owners and creditors to observe the operation of the firms and the encouragement of managers to work for the benefit of firm helps the firm to improve allocation of the available resources efficiently. This also encourages savers to be more willing to support production. Levine (2005) described that there is no financial arrangements that encourages the use of corporate governance in the firm can hinder the proper collection of savings from different areas and which leads to poor maintenance of fund or resources from flowing to profitable investments. Therefore, the effectiveness of corporate governance system directly encourages the performance of firms with big results on growth rates of the country.

The owner of the firm can use effective corporate governance on important matters which mean they need appropriate information for decision making. According to Levine 2005, when information is achieved at low costs enables the owners to make appropriate decisions and choose accordingly. If there is no frictions of the market and if the information given is accurate and reliable the managers will work with the aim of achieving shareholders interest and thereby improving the allocation of the available resources

2.3.3 Reduction of risk

Financial intermediaries make ease of hedging and risk pooling. It facilitates risk diversification in different firms or financial systems thereby encouraging efficient allocation of resources which leads to economic growth. Most of individuals are reluctant to risk; they prefer high return at low risk. But financial intermediaries

redirect more resources to high risk to achieve high return which leads to the improvement of productivity and therefore economic growth.

Andersen 2003) in his study suggested that diversifying risk occurs when the financial sector gives insurance to individual savers due to individual risk that an investment pays no return and Liquidity risk can be reduced and the possibility that savers may wish to with draw their decision before achievement of expected return. When economy improves, it indicates that there is an increase of savings thereby improving and attracting economic growth of a country.

Patrick 1966 suggested that diversification of risk which is a function performed efficiently by financial sectors helps to the contribution of economic growth in long run by varying allocation of available resources and rate of savings. Most of individual savers usually accept projects with high returns but with minimum risk while in reality most of projects that give high returns are associated with high risk. Therefore through available financial markets individuals get information easily on making optimal portfolio by considering risk and returns of each investment or projects.

2.3.4 Mobilizing and pooling savings

Savings from individuals are mobilized for large amount that can help to finance large projects. The savings are pooled by financial systems that enhance savings which in turn leads to higher cumulative for investments which in turn leads to economic growth. If there is no accumulation of individual savings which are achieved through financial institutions, this can lead the project or investment to operate below of its expected operation (efficient operation). Improvement of Technologies, investment and fund accumulation depends on financial institution that mobilizes savings and these improves more financial sector. According to Andersen (2003), a well developed financial sector will reduce constraints in an economy which increases the rate of Investment and thereby economic growth

Sirri and Tufano (1995) suggested that individual savers for investment, that accumulates savings through financial institutions considers the following (a) avoid

costs regarding truncations made that are connected with accumulation of savings from individuals savers and (b) makes sure that there are symmetries information available for every individual savers which in turn give confidence to those savers to give up their savings to borrowers through financial institution. Financial arrangements make easier regardless all costs that are associated to acquiring of information and financial transaction. Financial systems that are more effective at pooling the savings of individuals can make contribution to economic growth development by encouraging savings and effective use of the scarce. By managing the individual savings and be able to accumulate large fund for investment helps to improve allocation of resource and technological innovation.

2.3.5 Easing the exchange of goods and services

Financial intermediaries reduce transaction costs of exchange of goods and services, which enables individuals or firms to save. The saved money can be used to focus on productive investment or to specialize in certain activities or to create new technologies and innovations which lead to high productivity which in turn contributes to economic growth

According to new growth theory that focus on the current technological change which is the major factor of growth of technological development leads to continued stable growth due to the increase in production which would be sufficient to make up the decline in productivity that leads to accumulation of capital. Innovative and new technologies if used effectively lead to growth which in turn contributes to the growth of economy

According to Levine, 1997, the Country can attain improved economic growth by being able to organize the available resources and make proper decision on making allocation of these resources to more profitable projects or investments. As described by different researchers, the functions performed by financial institutions such as providing reliable information for investment decisions are the most important key which contributes to economic growth. Therefore managers and shareholders should work in their power to make sure that the objective of the firm are achieved

The impact of financial development on economic growth has been agreed by Calderon and Liu, 2003 Jung, 1986 that financial development is a key to economic growth. Financial development has a significant impact on economic growth and it is basic to alleviation of poverty and improvement in income contribution (World Bank, 2001).

The relationship between financial development and economic growth can be appropriate reviewed at industry and firm level, this is due to the reason that it is more expected that the size of financial development of a country influences the performance of a specific industries or firms. In the study conducted by Rajan and Zingales (1998) revealed that small new firms are likely to depend more on external finance in advanced productivity. This is advantage to these firms as they benefit from the lowest cost of financing in a better financial system than those recognized firm. The findings reveals that a new firms that stands for the unit of production and if effective technologies are formed, the financial development may increase productivity and therefore economic growth.

Most of economists and Researchers have suggested that financial development is most important factor for the growth of economy due to the following reasons; first as was explained by Shen and Lee (2006) that financial system which is well developed gives the way forward to better distribution of the available resources and reduces information asymmetric .Economic growth can be contributed by financial development through; Mobilizes savings; this increases the volume of resources available to finance investment. Thus it screens and monitors investment projects (lowering information acquisition costs); this contributes to the increase of the efficiency of the projects carried out Greenwood,& Jovanovic (1990). But Levine (1990) argued that the financial development is as a vital determinant of economic growth, which increases savings and facilitates capital accumulation and thereby boosts investment and growth.

Another reason is that financial institution reduces transaction costs that lenders and borrower incurs. With specialization FI can obtain information regarding transaction costs such as credit worthiness of borrowers, loan processing cost and others at low

cost compared to individual lenders thus increasing return to lenders and reducing interest rates, all these leads to the growth of economy.

Also financial system helps the country to allocate resources efficiently as explained by Demetriades and Andrianova (2004). A well developed financial institutions helps foreigners industry to borrow for their activities in the host country and therefore the increase of technology which benefits domestic industry thereby leading to the growth of economy. According to Mapesa -Lecture notes (2015) who explained that Well performing financial markets (FM) leads to producing high economic growth because activities in Financial Markets contributes to welfare of a person, consumers, business as well as economy at large and also FM helps to channel funds to individuals or institutions that need more funds, all these in turn leads to economic growth. Also Hermes and Lensink (2003) supported this idea that a well functioning financial markets leads to the growth of economy.

Some researchers have pointed that effective and efficient financial system in terms of financial institution and financial Markets are not more likely to be affected due to risk and financial crisis that normally affects the economy of the country, but even if the crisis occurs in the country that their financial system operates efficiently, it does not suffer more as compared to those countries with no well functioning financial system Beck (2000) and Bordo and Meissner (2006)

2.4 Empirical evidence

The relationship between financial development and economic growth has been recognized by different researchers, but the direction of causality between financial development and economic growth is a controversial issue. The question being does financial development cause economic growth or does economic growth cause financial development?

Gupta (1984) investigated the relationship between the financial development and economic growth from different developing countries. The results of the Gupta report indicates that causality runs from financial development to economic growth

which shows that the role of the financial development is more important in the process of economic growth.

Empirical evidence from different researchers and economists suggests that those countries having strong and well functioning financial system helps them to grow faster. King and Levine (1993) in their study indicated that there is a positive relationship that growth relates to financial development. In their study from year 1960 to 1989 indicated that financial system in some of the years under this study for example year 1960 showed a positive relationship to economic growth. But this can be argued that the positive relation in some years may be due to the increase of financial transaction performed in those years. But also tried to check if there is a reverse direction relationship between economic growth and financial development, that means if also economic growth leads financial development

King and Levine continued arguing that the result found does not essentially show if the financial development leads to economic growth, because the dimension of the financial institutions in the year under study especially in the year of 1960 may depend on the anticipation of the future economic growth. By using panel data revealed that there is a strong relationship between financial development and economic growth (For example, Levine, Loayza, and Beck 2000, Benhabib and Spiegel 2000).

Eita and Jordaan (2007) analyzed the causal relationship between financial development and economic growth in Botswana for the period 1977 to 2006, using Granger causality through cointegrated Vector Autoregression methods. The results showed that there is a stable long run relationship between financial development and economic growth. This means that financial development causes economic growth in Botswana. Also tested the causal relationship which revealed that the causality run from financial development to economic growth. From this result the researcher suggested that financial sector in Botswana is very important in the economic growth and development of the country. Financial systems should be enhanced in order to promote Botswana's economic growth.

The result found by Eita and Jordaan (2007) was different from what was revealed by Akinboade (1998) for the same country although used different proxies and different econometric technique (cointegrated vector autoregression method). Akinboade tested the causal relationship between financial development and economic growth for the period 1976 to 1995 and found that there is bidirectional causality between financial development and economic growth.

Apergis, Filippidis and Economidou (2007) summarized the views on the relationship between financial development and economic growth. Their view based on two main views on the financial development and economic growth relationship. The first view argued that financial development has a positive impact on economic growth, thus the effect of the relationship runs from financial development to economic growth. This relationship can be caused either by an improvement in the efficiency of capital accumulation or an increase in the rate of savings as well as the rate of investment. The second view was that there is a long run relationship between financial development and economic growth and the causal relationship was bidirectional

In the study conducted on Northern Cyprus, Guryay,(2007), examined the link and causal relationship between financial development and economic growth. The research utilized time series data for 19 years, covering the periods of 1986-2004. Their findings revealed an insignificant positive relationship between financial development and economic growth. Also they examined the direction of the causality between the two variables. Results from this study revealed that the causal relationship runs from economic growth to financial development. Meaning that financial development is influenced by economic growth

In a different way, Kar and Pentecost (2000) studied the causal relationship between financial development and economic growth in Turkey using time series data from 1963 to1995. Contrary to the findings of Cyprus, Guryay, (2007), the researchers found significant positive relationship. On the second issue of the direction of causality, the researchers found that the causality runs from both directions. One important finding is the fact that the strength of the causality running from economic

growth to financial development is higher. However, the researchers cautioned that this variability may not be unconnected to the sensitivity of the estimated models to the choice of proxies for financial development. Therefore, it cannot be fully accepted that financial development leads to output growth or that finance follows growth in Turkey.

Unlike the preceding argument in support of the demand-following hypothesis, Choong, (2001) tried to make a difference by using Stock Market Development to examine the causal relationship between financial development and economic growth. Using time series data from the Malaysian economy for the period 1978-2000, the causality results revealed that Stock Market Development does not cause economic growth.

In his study on India, Pradhan (2009) examined the relationship between financial development and economic growth using time series data over the period 1993-2008.The researcher stated a positive relationship between financial development and economic growth. The Granger causality test confirmed the interdependence between financial development and economic growth in India. Considering this bidirectional relationship, the researcher documented that the effect of financial development must be considered as a policy variable necessary to stimulate economic growth and vice versa.

Sinha and Macri (2001) examined the relationship between financial development and economic growth using time series data from eight countries. Employing the augmented production function approach and multivariate causality test as well, from the research, many of discoveries were made and the conclusion was that, no generalizations could be made about the effects of financial variables on economic growth for the countries under study. This was because, while for some countries, the financial variables seemed important, but for other countries were not.

In another study, Chimobi (2010)) examined the causal relationship among financial development, Trade Openness and economic growth in Nigeria using the Johansen multivariate approach to co integration and the vector auto regression (VAR)

approach for the Granger causality test over the period 1970 – 2005. The results reveal a different situation for Nigeria distinct from the fore stated views that there are no co integration relations among Growth, trade openness and the three measures of financial development (i.e. direct credit, private credit and money supply). The causality results reveal a unidirectional causality running from economic growth to trade openness. This implies support for growth-led trade and that economic growth causes financial development

Another related study was also conducted by Aziakpono 92005) who examined the question of whether domestic financial Institutions will become irrelevant in Promoting economic growth using the experience of the Southern African Customs Union (SACU). The study applied the Zellner Seemingly Unrelated Regressions Estimation method using panel data for the period 1980-2000. The empirical evidence shows that domestic financial intermediation is still relevant in such financially integrated markets. Within the SACU, South Africa demonstrated strong evidence of the relevance of domestic financial intermediation in promoting economic growth.

However, the evidence was weak for Botswana and Lesotho due to their weak financial system as well as institutional and structural problems inherent in their economies. The case of Swaziland was not good than in other countries as the role of financial institutions in promoting economic growth became less important. However, the researcher recommended that the depth of the financial system along with addressing other institutional and structural problems in such economies will be a necessary precondition for deriving maximum gains from financial intermediation.

Vazakidis and Adamopoulos (2009) had the objective of finding the causal relationship between financial development and economic growth from 1978 to 2007. They used the vector error correction model (VECM), Johansen co integration method and Granger causality tests. It was found that economic growth has a positive effect on Stock and Credit Market Developments through Industrial Production Growth in Greece. Therefore ,economic growth speed up financial market

development taking into account the positive effect of industrial production on economic growth.

Using time series data for 41 years from 1960 to 2000 Abu-Bader and Abu-Qarn (2005) explore the causal relationship between financial development and economic growth in Egypt. Granger causality tests were carried out using the co-integration and vector error correction (VEC) models after pre-testing for unit roots in all variables (using the Augmented Dickey Fuller- ADF test). The null hypothesis of a no co-integration relationship at 5% level of significance was rejected. In addition, they found that the financial reforms put in place in 1990 were responsible for the economic rebound of Egypt.

Levine (1998) explored the effect of the banking sector development, proxies by credit allocated by deposit-taking banks to the private sector divided by GDP, on economic growth, capital accumulation and productivity growth. His empirical analysis was based on 42 developed and less developed countries during the 1976-1993 period. By using a panel data, he found a positive relationship between the components of banking development with economic growth.

Levine and Zervos (1998) stated the impact of the stock market and the banking sector development on economic growth for a cross-section of 42 countries over the period 1976-1993.They showed that stock market liquidity and bank development can predict economic growth, capital accumulation and productivity growth.

Levine (2000) also evaluated the role of financial development in a pooled cross-section setup using averaged data across the period 1960-1995. Using a GMM estimator, the authors showed that financial intermediary variables, namely, liquid liabilities and private credit, and economic variables (annual growth rate of real GDP have a statistically significant and positive effect on economic growth on a panel of 71 countries.

Similarly, Cole, Moshirian and Wu (2008) examined the relationship between banking sector and economic growth for 18 developed and 18 emerging markets over the period 1973-2001. By using dynamic panel techniques, they found a positive and

significant relationship between bank stock returns and GDP growth Researchers have used different measures and methodologies to examine the causal relationship between financial developments and economic growth.

Positive relationship between financial development and economic growth was supported by Greenwood and Smith (1997) and Levine (1997). In their study found that in establishment of credit in financial sector leads to improvement of economic growth. They continued arguing that the establishment of the credit should not be controlled by providing deposits because of the existent of an idle balance in the system and the risk of borrowing from the financial system. Also Ghali (1999) gave views by arguing that the availability of money in the financial system transforms into the establishment of credit for funding economic activity thereby leading to high economic growth.

For causal relationship between financial development and economic growth was also examined by Akinboade (1998), the period of examination was from 1976 to 2005.The outcome of the findings showed that the direction of the relationship between them is bidirectional. Both Financial Development and economic growth depend to each other, thereby concluding that financial development and economic growth in Botswana seem to supplement each other

Choe and Moosa (1999) also check the relationship between financial development and economic growth for the country of Korea. The study focused on the relation between development of financial intermediaries and capital markets. Causality test shows that financial development in general leads to economic growth

Ghali (1999) examined practically the relationship of financial development and Economic Growth, the aim was to observe which one between the two leads to another in Tunisia Country. The examination was done using Vector auto regression (VAR) technique. The outcome of findings revealed that there is secure relationship between financial development and economic growth. The direction of the relationship flows from financial development to economic growth

The study done by Calderon and Liu (2003), examined the causal relationship between financial development and economic growth from the period of 1960 to 1964. The findings proved that usually, financial development directs economic growth. Also the report revealed that the causal relationship between financial development and economic growth is bidirectional. The implication of the findings is that the growth of economy is influenced by the development of financial system; also financial system development depends on the growth of the economy of the country.

Most of studies have suggested that financial development is the most important factor in supporting the economic growth Hasan, Koetter and Wedow (2009) in their study of 31 chinese provinces using panel data revealed that financial institution sector and financial markets encourage the GDP growth rates, Bittencourt (2012) examined the function of financial development in supporting economic growth. The case study was from four Latin American countries from 1980 to 2007 using time analysis. The result indicated that financial development is the most important role in leading to economic growth

Hsueh, Hu and Tu (2013) found the causal relationship between financial development and economic growth of ten Asian countries from the1980 to 2007 period that the direction of causal relationship runs from financial development indicators to economic growth in most countries within the study. Narayan and Narayan (2013) confirmed that financial sector contributes to economic growth but for the Middle Eastern countries result revealed that financial sector and banking sectors do not support the economic growth excluding Asia which revealed weak relations on the importance of financial development to economic growth

Al-Avad and Harb (2005), examined the relationship between financial development and economic growth for ten Middle east and North Africa countries from 1969 to 2000 period. The report revealed that in long run financial development and economic growth have a relationship to some level and in short run the causal relationship revealed very weak between the two variables

Ben Salem and Trabelsi (2012) investigated the relationship between financial development and economic growth over 1970 to 2006 using panel co integration method. The result indicated that there is a long run relationship between financial development and economic growth. But in short run indicated a week proof that finance is a leading sector to the economic growth

Jung (1986) examined the causal problem of the relationship; the finding was that financial sector development has a bi-directional relationship with economic growth. In his study of 56 countries found that the causal direction flowing from financial development to economic growth is more repeatedly observed than the reverse when he runs regressions between GDP per capita and the proxies of financial development. Interesting, Jung found that less developed countries are characterized by a causal direction running from financial development to economic growth, while developed countries are often characterized by a reverse causal direction

2.5 Variables of the study as used by other researchers

King and Levine (1993) examined the relationship between economic growth and financial development indicators (liquid liabilities over GDP, bank credit over bank credit plus central bank domestic credit to private sector divided by GDP) using cross-sectional data for 77 countries over the 1960-1989 period. They showed that a country's level of financial development can predict its level of economic growth.

Godfrey Ndlovu (2013), used real Gross Domestic Product (GDP) per capital as a measure of economic growth also used Domestic Credit to Private Sector, Stock Market Capitalization Ratio to GDP as a measure of financial development to determine the relationship between financial development and economic growth.

Antzoulatos (2008) studied four categories to create financial development indices, and these include banks, financial institutions, stock market and bond market development indices. The proxies for banking sector development included deposit money bank assets to GDP, and private credit issued by domestic money bank to GDP. The development of stock market captured by the stock market capitalization to GDP, stock market total value traded to GDP, and finally with turnover ratio of

stock market. The proxies for the bond market development include private bond market capitalization to GDP and public bond market capitalization to GDP.

Zhang (2012) used credit, deposit, Savings, corporate and stock market capitalization as financial development indicators to examine the relationship between financial development and economic growth in China using panel data

Demetriades (1996) employed the ratio of deposit to GDP to measure the financial development in sixteen countries. The recommendation is that the currency in circulation should be eliminated from the broad money stock to measure the financial development, because an increase in the ratio of broad money to GDP shows the wide use of currency in circulation rather than an increase in the volume of bank stocks

Saci, Giorgioni and Holden (2009) measured the financial development by using the principal component analysis. To measure the development of financial intermediaries ten proxies for the financial development included. To measure the importance of banking sector, the ratio of commercial bank assets commercial plus central bank assets, credit issued to private sector to liquid liabilities, domestic credit to the private sector to GDP, the ratio of liquid liabilities to GDP, was included. To capture the impact of stock market development, the stock market capitalization to GDP, turnover ratio, value traded ratio, number of listed companies, are examined. The ratio of broad money and narrow money is also employed to examine the structure of the financial system and its importance

CHAPTER THREE

METHODOLOGY

2.6 Introduction This chapter explains the methodology of research report. It begins with providing the types and source of data which are secondary data that were obtained from different sources online such as International Monetary Fund, World Bank and Economic indicator records .Sample size used in this report covers the period 1987-2013 for the selected east African countries that is, Tanzania, Kenya and Uganda. Two variables were used in this report which are financial development represented by three proxies (Domestic credit to private sectors, financial system deposits and Liquidity Liabilities) and Economic growth that was represented by annual growth rate. The chapter also shows two models that used to examine the relationship between financial development and economic growth and the study applied Quantitative research design .The relationship between financial development and Economic growth was analyzed using Vector auto regression model also two techniques used to test the presence of unit root (ADF and PP).

2.7 Types and sources of data

The study used Time series data that are secondary data in order to obtain the quality information that have the required integrity in determining the nature of relationship and examining the causal relationship between financial Development and economic growth. The secondary data obtained from different sources online which are International Monetary Fund, World Bank and Economic indicator records

Ghauri and Gronhaug (2005) argued that information collected by expertise organizations offer more information. They went on saying that secondary data are useful not only to find the information to solve our research problem but also to better understands and explain our research problem.

The secondary data are generally expected to give high quality and reliability as they are already collected and compiled by experts using appropriate methods. However, in reaching at the final conclusion on the relationship between financial development

and economic growth in east African countries, the study obtained data from different sources. These sources are International Monetary Fund, World Bank and Economic indicator records

2.8 Sample Size

The sample size used in a study was determined basing on the method of data collection, the available data and also the need to have sufficient and accurate result to enable the researcher to gate the useful result for positive decision making

Lenth (2011), says that the sample must be big enough that an effect of such magnitude as to be of scientific significance and also be statistically significant. Large sample sizes generally lead to increased accuracy when estimating unknown parameters. However, Lenth goes on suggesting that the sample must not be too big where an effect of little scientific importance is nevertheless statistically detectable this idea was supported by Sekaran (2003). For the purpose of this study, the researcher used the sample that covered the period 1987-2013 for the selected east African countries that is. Tanzania, Kenya and Uganda which is appropriate to give a reasonable result

2.9 Variable Definitions, Measurement and articles (reference)

This study used two variables, financial development that was represented by three proxies (Domestic credit to private sectors, financial system deposits and Liquidity Liabilities) and Economic growth that was represented by annual growth rate. These proxies were used also by previous researchers such as Zhang 2012, ndlovu (2013), Saci and Holden (2008), King and Levine (1993), to examine nature and the causal relationship between financial development and economic growth.

2.10 Variable Definitions:

2.10.1 Economic growth

Economic growth is an increase in the amount of goods and services produced per head of the population over a period of time It is conventionally measured as the

percent rate of increase in real GDP. This study used annual growth rate of real GDP as proxy of economic growth which is dependant variable; Annual growth rate of real GDP was used as a proxy of economic growth in most of studies, researchers that used Annual growth rate include King and Levine (1993), Demetriades and Hussein (1996), and Mohamed A (2011)

2.10.2 Financial development

Financial development is usually defined as a process that marks improvement in quantity, quality, and efficiency of financial intermediary, financial institution and financial markets services. This process involves the interaction of many activities and institutions. Financial development as defined by (Levine 2004) is a situation where financial instruments, markets and intermediaries improve. Therefore in this study financial development means improvement in financial institutions, financial intermediaries and financial markets.

Financial development was determined by three proxies and therefore independent variables, these are;

Domestic Credit to Private Sector (in percentage): refers to financial resources provided to the private sector by financial institutions, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. This is a proxy of financial development that helps to determine annual growth rate of real GDP which represents economic growth. This proxy was used by Jalil and Ma, (2008). According to De gregorio and Guidotti (1995) who suggested that this proxy is a good pointer of fund allocation to private sector and therefore good proxy of financial development. According to Akinboade 1998), Domestic credit is more effectively in private sector for productivity than in public sector because provision of credit to private sector shows efficiency and productive project or investment Demetriades and Hussein (1996). Domestic credit is more preferred proxy of financial development for measuring economic growth in developing countries

Liquid Liabilities (in percentage): A measure of the extent to which a person or organization has cash to meet immediate and short-term obligations,. This also used as a proxy of financial development. Most of researchers used this proxy as the major indicator of financial depth; the proxy indicates the ratio of the size of the financial sector to economic growth as suggested by Johannes (2011). It is usually considered as the main pointer of financial depth, It is wider measure of accumulated monetary economy Islam, Habib and Khan (2004), and the increase of liquidity liability ratio indicates the improvement of financial deepening in the economy (Boulila and Trabelis, 2002)

Financial system deposits: Refers to the system that covers financial transactions and the exchange of money and link depositors with investors, borrower and lenders. The total financial system deposits, (in percentage) as used by Zhang, Wang and Wang (2012), beck (2009) and Demetriades (1996). This proxy is a good measure of the overall size of financial intermediaries

2.11 The Econometric Model

The causal relationship between financial development and economic growth was determined using Vector auto regression and granger causality model, thereby identifying if there is any differences that exist between the east African countries. The granger causality model used to determine the relationship, however in running the model in stata program these variable were represented by their proxies that is Economic Growth was represented by Annual growth rate to real GDP and Financial Development was represented by three proxies which are liquid liabilities, Domestic credit to the private sector and Financial System Deposits where each proxy of Financial development was used to determine the causal relationship.

The model chosen based on the assumption that there is a relationship between financial development and economic growth, in order to detect existing differences between the selected countries. Therefore the model involved independent variable (Financial development) that can explain variations in the dependent variable (economic growth). The following is the equation that was used to explain Annual

growth rate of real GDP (Dependent variables) using three independent variables which are Domestic credit to private sector, Liquidity Liability and financial development deposits that is obtained through regression analysis. (All variable in percentage)

AGR= co + b1DC +b2LL+b3FSD+ et

Where;

AGR= Annual growth rate of real GDP that represents economic growth

DC = Domestic credit to Private sector denotes financial development

LL= Liquidity liabilities denotes financial development

FSD= Financial system deposits denotes financial development

co is the value *AGR* predicted to have when all the value of independent variables are equal to zero. b1, b2 and b3 are the coefficient that describes the size of the effect of independent variables (financial development) on dependent variable (economic growth) and et is standard error, which is an estimate of the standard deviation of the coefficient,

Variable Definitions, Measurement, Data source and articles are summarized in the table below

VARIABLES	MEASUREMENT	DATA SOURCE	ARTICLE/REFERENCE
Annual growth rate	Annual growth rate of real GDP (in percentage)	World bank and Economic indicators records	- zhang (2012) - Mohamed (2011) - Kilimani (2009 - Levine (2000) - Olusegun (2013)
Domestic Credit	The ratio of private sector loans in the financial system deposits (in percentage)	World bank Economic Indicators records	-Abubakar, Aisha mohamed -Ndlovu (2013) - Beck (2009) - King and Levine (1993) - Saci and Holden (2008) - Olusegun (2013)
Liquidity Liability	The ratio of Liquidity to GDP (in percentage)	World bank Economic Indicators records	-Olusegun(2013) -Ndlovu (2013) -King and Levine (1993) -Alaoni Mostain (2003)
Financial system deposits	the ratio of total financial system deposits to GDP(in Percentage)	World bank Economic indicators records and IMF	-zhang (2012) -beck (2009) - Demetriades (1996)

***Source**: Author's Construct, 2016*

2.12 Data analysis methods

After data collection, the data were edited there by examining for errors and made correction where necessary. The research deployed the quantitative research approach analyzing by using stata program and the study used only secondary data, the nature/relationship of FD and EG were determined by the using Vector auto regression (VAR) and the causal relationship between financial development (FD) and Economic Growth (EG), was examined by using Granger causality test in Vector autoregression (VAR) model.

According to Luetkepohl (2011), the VAR model is suitable for Time series data, it is natural tools for forecasting and their setup is such that current values of a set of

variables are partly explained by past values of the variables involved. VARs provide a flexible and tractable framework for analyzing economic time series. Granger-causality is related to the well-known idea of Granger-non causality, but it accounts better for the presence of multiple variables and is central to sufficiency results for variable choice in VARs Jarociński and Maćkowiak (2013)

The Granger causality test establishes the causality between two or more variables and shows that causal relationship is either bi - directional or uni - directional or independent among the variables under study Olukayode (2013), this is relevant to this study as it examined the causal relationship between financial development and economic growth using granger causality test.

Many macroeconomic time series contain unit roots dominated by stochastic trends as developed by Nelson and Plosser (1982). In a time series test, the first thing to do is to determine if there are common stochastic trends present among the variables. In other words, the test is to determine the stationarity of the dataset. According to Granger and Newbold (1974), time series data is capable of producing spurious regressions which can generally mislead. Thus, the study deployed Augmented Dick-Fuller (ADF) and Phillip-Perron techniques to test for the presence of unit roots in the data. These technique also were used by olukayode (2013), Christopoulos (2004) ,Kilimani (2009) and Abu-Bader and Abu-Qarn (2005)

CHAPTER FOUR

PRESENTATION OF FINDINGS AND INTERPRETATION

2.13 Iintroduction This chapter shows of what the researcher has found after running the data. After collecting the data and analyzing them as described in chapter three, the chapter presents of what actually was found. It shows the nature of the relationship and the causal relationship between financial development and economic growth as depicted by the model. The information in this chapter is mainly on how the result shows and not researcher's opinion. The findings are presented in line with the research specific objectives

2.14 Presentation of Findings

The report has three specific objectives; the first one is to examine the relationship between financial development and economic growth and the second objective was to determine the nature of the relationship in these cases, time series linear regression was used to examine the relationship and the nature between financial development and economic growth. The dependent variable is economic growth represented by annual growth while independent variable is financial development represented by domestic credit to private sector, Liquidity Liabilities and Financial system deposits. The third objective is to determine the causal relationship between financial development and economic growth. The researcher used granger vector autoregession (VAR) test to determine the causal relationship

2.14.1 The nature of relationship between economic growth and financial development

The nature of relationship between financial development and economic growth in east African countries was determined basing on the data of each country and the result was as shown in tables and explained independently

Table 4.1 Vector auto regression (VAR) results – Tanzania

Dependent variable	**Independent variables**		
Annual growth rate	Domestic credit to Private sector	Liquidity Liabilities	Financial system deposits
	0.2670 (0.1668)	0.2017 (0.5723)	-0.5621 (0.7597)

- Standard errors in parenthesis

- R^2 0.1123

- N 27

Table 4.1 Presents regression results for Tanzania data. Annual growth rate was regressed against three proxies of financial development which are Domestic credit to private sector, Liquidity Liabilities and financial system deposits. As seen in the table above, the coefficient of domestic credit to private sector and Liquidity liabilities are positive but not statistically significant , the value of p-value of domestic credit to private sector and Liquidity liabilities are more than 10% significant level.

The results indicate that the effect of one percentage increase in financial development when domestic credit to private sector used as a proxy of financial development causes Economic growth to increase by 0.2670 percent and when Liquidity Liability used a proxy of financial development changes by one percent increase causes Economic growth to increase by 0.2017 percentages. The relationship between financial system deposits and annual growth rate is negative and not statistically significant, thus when financial development represented by financial system deposits changes by one percentage decrease leads to decrease by0.5621percentage in Economic growth.

The result revealed that there is a positive insignificant relationship between financial development and economic growth when domestic credit to private sector and liquidity liabilities are used as proxies of financial development for measuring economic growth while using financial system deposits revealed a negative insignificant relationship.The coefficient of determination R^2 is 0.1123 which indicates that economic growth can be explained by financial development represented by its three proxies only by 11.23% and the remaining 88.77% can be explained by other proxies which were not used in this model .

Table 4.2 Vector auto regression (VAR) results – Kenya

Dependent variable	**Independent variables**		
Annual growth rate	Domestic credit to Private sector	Liquidity Liabilities	Financial system deposits
	-0.1969 (0.2123)	-1.1301 (1.1507)	1.3946 (1.3798)

- Standard errors in parenthesis

- R2 = 0.0698

- N 27

Table 4.2 Presents regression results based on Kenya data. Annual growth rate was regressed against three indictors of financial development: Domestic credit, Liquidity Liabilities and financial system deposits. The coefficient of domestic credit to private sector and Liquidity liabilities are negative and not statistically significant .This indicates that when financial development represented by domestic credit to private sector changes by one percent decrease leads Economic growth to decrease by 0.1969 percent. Also the effect one percent decrease in financial development (liquidity liabilities) causes Economic growth to decrease by 1.1301 percent. The coefficient of financial system deposits is positive and not statistically significant

indicates that the change of one percent increase in financial development (financial system deposits) causes annual growth rate to real GDP increase by 1.3946 percent.

The relationship between financial development and economic growth is negative insignificant when domestic credit and liquidity liabilities are used as proxies of financial development and annual growth rate as proxy of economic growth, Using financial system deposits shows a positive insignificant relationship which is quite different from Tanzania results. The coefficient of determination R2 is only 0.0698 which indicates that economic growth can be explained by financial development only by 6.98% and the remaining 93.02 % can be explained by other proxies that were not used in this model.

Table 4.3 Vector auto regression (VAR) results – Uganda

Dependent variable	**Independent variables**		
Annual growth rate	Domestic credit to Private sector	Liquidity Liabilities	Financial system deposits
	-0.2284 (0.3946)	3.8725 (2.1946)*	-3.9782 (2.6844)

******/**/* indicates causality relationship at significant level of 1%, 5% and 10% respectively***

- Standard errors in parenthesis

- R^2 = 0.1880

- N = 27

Table 4.3 Presents regression results based on Uganda data. The result is quite different from Tanzania and Kenya results. The coefficient of domestic credit to private sector and financial system deposits are negative and not statistically significant. When financial development represented by domestic credit to private sector changes by one percent decrease leads to decrease by 0.2228 percent in Economic growth and also when financial development represented by financial

system deposits changes by one percent decrease leads to decrease by 3.9782 percent in Economic growth. When financial development as represented by Liquidity liabilities changes by one percent increase leads to increase by 3.8725 percent in Economic growth and statistically significant at 10% level of significant which indicates that The result indicates a negative insignificant relationship between financial development and economic growth when domestic credit to private sector and financial system deposits used as indicators of financial development and annual growth rate as indicator of economic growth. Using liquidity liabilities shows a positive insignificant relationship .The coefficient of determination R^2 indicates that Annual growth rate can be explained by financial development proxies only by 18.80% and the remaining 81.20 % can be explained by other proxies that was not included in the model.

2.14.2 Causal relationship between financial development and economic growth

The result of granger causality test are explained in term of the relationship between financial development which is represented by domestic credit to private sector, liquidity liabilities and financial system deposits and the Economic growth which is represented by annual growth rate. The results obtained after running the model were as shown in table 4.4, 4.5 and 4.6 below

From table 4.4 shows that Domestic credit to private sector, Liquidity Liabilities and financial system deposits which used as proxies of financial development causes Economic growth which was represented by annual growth rate in this model. Domestic credit to private sector causes Annual growth rate at 1% level of significant and Liquidity liabilities and financial system deposits causes' annual growth rate at 5% statistically significant level

Also the results indicate that Annual growth rate which is proxy of economic growth causes Domestic credit to private sector which represent financial development at 1% significant level. But the results do not indicate the causal relationship running from annual growth rate to Liquidity Liabilities and from annual growth rate to financial system deposits. This means that only one proxy of financial development

(domestic credit to private sector) is affected by annual growth rate. Therefore it indicates a bidirectional causal relationship between financial development and economic growth where the strong relationship runs from financial development to economic growth

Table 4.4 Granger causality tests (GCT) results - Tanzania

Equation	Exclude	F	Prob>F
Gdp	Dc	19.992	0.0013***
Gdp	Ll	8.0172	0.0138**
Gdp	Fsd	5.4349	0.0339**
Gdp	ALL	18.455	0.0009***
Dc	Gdp	15.252	0.0027***
Dc	Ll	1.2172	0.3943
Dc	Fsd	1.3459	0.3542
Dc	ALL	7.1032	0.0124**
Ll	Gdp	1.5062	0.3110
Ll	Dc	.66709	0.6379
Ll	Fsd	1.8592	0.2369
Ll	ALL	2.0858	0.1887
Fsd	Gdp	3.023	0.1096
Fsd	Dc	.76044	0.5871
Fsd	Ll	2.9115	0.1171
Fsd	ALL	3.0204	0.0922

******/**/* indicates causality relationship at significance level of 1%, 5% and 10% respectively***

From table 4.5 shows that Domestic credit to private sector, Liquidity Liabilities and financial system deposits which was used as proxies of financial development do not affect annual growth rate at any level of significant and annual growth rate causes only financial system deposits at 5% of significant level. The result did not show the effect of annual growth rate to Liquidity Liabilities and domestic credit to private sector. This means that there is a unidirectional relationship between financial development and economic growth running from economic growth to financial development (from annual growth rate to financial system deposits

Table 4.5 Granger causality tests (GCT) result - Kenya

Equation	Exclude	F	Prob>F
Gdp	Dc	.97139	0.4872
Gdp	Ll	.79634	0.5687
Gdp	Fsd	1.4552	0.3240
Gdp	ALL	1.6877	0.2689
Dc	Gdp	1.2959	0.3691
Dc	Ll	4.9256	0.0420**
Dc	Fsd	5.8319	0.0290**
Dc	ALL	3.7327	0.0584*
Ll	Gdp	4.3855	0.536
Ll	Dc	1.1717	0.4098
Ll	Fsd	.68183	0.6296
Ll	ALL	4.2029	0.0446**
Fsd	Gdp	4.5579	0.0494**
Fsd	Dc	1.3878	0.3422
Fsd	Ll	1.0297	0.4631
Fsd	ALL	4.0917	0.0475

******/**/* indicates causality relationship at significance level of 1%, 5% and 10% respectively***

From table 4.6 shows that Domestic credit and financial system deposits as proxies of financial development causes annual growth rate in Uganda. Domestic credit causes Annual growth rate at 1% of significant level and Financial system deposits causes Annual growth rate at 10% of significant level and Liquidity liability does not affect annual growth rate at any level of significant .The result did not reveal any causal relationship running from annual growth rate to Domestic credit to private sector , to financial system deposits or to liquidity liabilities. This means that there is a unidirectional causal relationship between financial development and economic growth running from financial development to Economic growth

Table 4.6 Granger causality test (GCT) results - Uganda

Equation	Exclude	F	Prob>F
Gdp	Dc	9.2635	0.0097***
Gdp	Ll	1.7599	0.2552
Gdp	Fsd	3.3373	0.0915*
Gdp	ALL	9.5518	0.0057***
Dc	Gdp	1.905	0.2290
Dc	Ll	5.3417	0.0352**
Dc	Fsd	5.6614	0.0310**
Dc	ALL	5.723	0.0213**
Ll	Gdp	3.014	0.1102
Ll	Dc	.96798	0.4887
Ll	Fsd	2.4895	0.1527
Ll	ALL	2.8791	0.1018
Fsd	Gdp	2.2691	0.1769
Fsd	Dc	1.9698	0.2184
Fsd	Ll	3.1391	0.1024
Fsd	ALL	2.9338	0.0980

******/**/* indicates causality relationship at significance level of 1%, 5% and 10% respectively***

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

2.15 Introduction

This chapter discusses in detail the findings presented in chapter four. It begins with discussing on the relationship examined and the nature of the relationship between financial development and economic growth and also on causal relationship which is the main concern of the report. Discussion based on what actually was revealed in this report and made comparison from the results that were found by previous researchers regarding the nature and the causal relationship between financial development and economic growth. Also discussion based on how each proxy of financial development relates or affects economic growth

2.16 The Relationship between financial development and economic growth

The nature of the relationship between financial development and economic growth was determined as presented in Tables, 4.1, 4.2 and 4.3, that Domestic credit to private sector revealed negative insignificant relationship for Kenya and Uganda while for Tanzania revealed positive insignificant relationship to annual growth rate. For all times in this study domestic credit to private sector when used as a proxy of financial development the relationship between financial development and economic growth in all countries under study indicated either positive or negative but insignificant at all significance levels (Table 4.1 - 4.3)

Liquidity Liabilities as a proxy of financial development revealed positive relationship for Tanzania and Uganda but for Kenya revealed Negative relationship. In all cases Tanzania and Kenya results found not to be statistically significant but for Uganda the result revealed positive statistically significant at 10% level of significant. This means that there is a positive relationship between financial development and economic growth in Tanzania, and Uganda but for Kenya it is

negative relationship when a Liquidity liability is applied as a proxy of financial development

For Financial system deposits as a proxy of financial development revealed negative relationship for Tanzania and Uganda but for Kenya revealed a positive relationship and in all cases they are not statistically significant. The results indicates that there is a negative relationship between financial development and economic growth for Tanzania and Uganda, for Kenya there is a positive relationship when financial system deposits is used as a proxy of financial development

The positive relationship between financial development and economic growth is supported by Greenwood and Smith (1997) and (Levine 1997). They suggested that in improving financial sector and the formation of credit contributes to the growth of economy. Also was supported by Ghali (1999) who explained that the accessibility of money in the financial system leads to the formation of credit to finance economic activity and therefore improvement of economic growth.

The prevailing view of economist and theories suggests that financial development and economic growth have a positive relationship. This can be agreed due to the reason that financial development helps the improvement of the financial system by carrying out various functions and these functions contributes to the influence of savings and investment decisions thereby contributing the growth of economy. Schumpeter, (1911) emphasized that the services given by the financial institutions are significant for improvement and development which in turn contributes to the growth of economy

The negative relationship between financial development and economic growth can be due to the effect of Government interference on the development of financial system as analyzed by Fry (1978, 1980) and Galbis (1977). According to them the effect of the government interference to give limits such as credit ceilings and high reserve requirements on the banking system which can cause a negative impact on the development of the financial sector/institutions and this can lead to the negative impact on economic growth.

These results shows that for each proxy of financial development used, gives the same result for only two countries and different result in one country. This can be argued that although east African countries have different economies but to some extent the relationship between financial development and economic growth in one country relates to another country when either one of the proxy is used (Domestic credit to private sector, Liquidity Liabilities or financial system deposits) as indicators of financial development to measure annual growth rate. These can be argued that the relationship between these variables in one country relates to another country meaning that if one proxy is used for example Domestic credit to private sector indicated insignificant relationship for Uganda and Kenya (table 4.1,4.2, and 4.3). However the result did not indicate the same results for all countries when each of the proxy was used as a measure of economic growth.

The coefficient of determination (R2) for all countries is less than 50% This means that the chosen proxies of financial development do not explain more the economic growth in east African countries The model were found not to be adequate because the probability values for all cases were found not to be statistically significant except Liquidity liability which indicated positive significant relationship for Uganda at 10% level of significant. This can be argued that the variables selected as proxies of financial development may not be suitable for measuring economic growth in east African countries.

2.17 Causal relationship

From table 4.4 The result revealed that all proxies of financial development contributes on economic growth and also economic growth in Tanzania contributes to the development of financial system as annual growth rate cause domestic credit to private sector. This indicates that there is bidirectional causal relationship between financial development and economic growth, thus economic growth in Tanzania depends on financial development, meaning that the increase of the ratio of domestic credit to private sector, liquidity liabilities and the increase of deposit in the system contributes to the growth of economy.

Also economy growth contributes to the increase, improvement and development of financial institution or intermediaries in Tanzania, although the causal relationship of economic growth to financial development is weak because only one proxy was seen to be affected by economic growth, the result did not reveal the effect of economic growth to liquidity liabilities as well as to financial system deposit. Since each proxy was representing financial development, the effect of economic growth to any one of proxy indicates that economic growth has a contribution to financial development. Therefore this report indicates that there is bidirectional relationship between financial development and economic growth in Tanzania.

The result of bidirectional is supported by Kar and Pentecost (2000) who found that the causality runs from both directions and also revealed that the strength of the causality running from economic growth to financial development is higher, which is quit contrary to this study .The result of this study revealed that the strength of causality run from financial development because all proxies of financial development revealed the causal to economic growth and only one proxy was seen to be affected by economic growth in Tanzania (domestic credit to private sector). According to Andersen (2003) who argued that providing credit to the private sector can increase investments, which again can accelerate economic growth. However, it is also possible to argue for the fact that it can be difficult to develop a financial sector without any economic resources that already existing

The contribution of Financial development to economic growth can be due to the fact that the services provided by financial institution to their customers such as issuing loans and investment, providing outlet for savings and other many services leads to the economic growth. This argument was supported by Pradhan (2009), where the researcher documented that the effect of financial development must be considered as a variable necessary to stimulate economic growth and vice versa.

Also this result was supported by Wood (1993) who examined the causal relationship between financial development and economic growth in Barbados during the 1946-1990 period and found a bi-directional causal relationship between financial development and economic growth. However, this direction relationship between

financial development and economic growth in Tanzania should not be taken as a final conclusion but more researches need to be done using other proxies because the chosen ones for representing financial development showed small percentage that explained the dependent variable (economic growth). Therefore these proxies may not be the proper explanatory to this model for measuring economic growth in Tanzania.

From table 4.5 the result revealed that financial development in Kenya does not have any effect on Economic growth. Only Economic growth leads to financial development when financial system deposit is used as a proxy of financial development. That means there is a unidirectional relationship between the two variables. This result is supported by Guryay (2007) whereby the results revealed that the causal relationship flows from economic growth to financial development. In other words, financial development is influenced by economic growth and is contrary to the result from table 4.4 above.

Another support to this study is from Chimobi (2010) who examined the causal relationship among financial development and economic growth in Nigeria using the vector auto regression (VAR) approach for the Granger causality test over the period 1970 – 2005. The causal results reveal a unidirectional causality running from economic growth to financial development. This implies that economic growth leads to financial development.

Also Odhiambo (2008) supported this results of Kenya, in his study concluded that it is the economic growth which causes financial development. But he cautioned that the causality relationship between financial development and economic growth is sensitive to the choice of proxies of financial development .The result is opposite to what was found by Akinlo and Egbetunde (2010) who found that there is a bidirectional relationship between financial development and economic growth in Kenya

These results is also different from what was revealed by Onuoga (2014) who found that from all the estimated results of his study there is bi-directional causality

between financial development and economic growth in Kenya in the period of study. The results agreed with other previous studies of (Songul 2009) that found bi-directional causality between financial development and economic growth for Sub-Saharan Africa and Rachdi and Mbarek (2011), whose findings revealed the existence of bi-directional causality for OECD countries. The results also was opposite to what found by Akinlo and Egbetunde (2010) whose findings confirmed existence of bi-directional causality between financial development and economic growth in Kenya.

Table 4.6 revealed that financial development in Uganda influences the economic growth when domestic credit to private sector used as proxy of financial development and not vice versa. The relationship between financial development and economic growth is unidirectional. The result is contrary to those results for Tanzania and Kenya. This relationship is supported by Gupter (1984) whose result indicated that financial development leads to economic growth, also King and Levine (1993) who examined the relationship between economic growth and financial development whereby their result showed that a country's level of financial development can predict its level of economic growth, also Kilimani (2009), Boulika, Trabelisi (2002) and Nowbusting, Ramsohok and Ramsohok (2010). This result also is supported by Jung (1986) whose findings revealed that less developed countries are characterized by a causal direction running from financial to economic development

These results indicate that each country in east Africa has its own way of developing in term of economic and financial institutions. As seen in Tanzania as financial institution improves (increases) contributes the growth of economy and also as economy grows leads to the improvement and increase of financial development. For Kenya it is one way direction, only economic growth contributes to the development of financial development, the development of financial institution does not have any impact on economic growth and for Uganda, financial development contributes to the growth of economy.

The implication of these results indicates that there is a need for east African countries to improve their financial system for economic growth improvement. The government of these countries should organize and support the improvement of financial sectors which in turn leads to the economic growth. Financial system need to be developed in such a way that it makes easier and attract foreigners to improve or to establish financial institutions.

According to Andersen (2003), a well- improved financial system can be seen as well-offered financial services that can contribute to more competition. Competition brings more effective and efficient output such that lowering prices with high quality of goods or services, Interest rate and taxes that can be reduced to a reasonable percentage and also credits limitations can be reduced thereby allowing more committed people to invest in the country. Andersen continued arguing that by increasing services that rendered by financial sectors can lead to higher employment opportunities which in turn improves economy of a country

Also the result showed that each country indicated only one proxy that showed a positive relationship which differ from other countries. But for two countries the relationship was insignificant and only Liquidity Liabilities indicated a positive significant relationship for Uganda. Meaning that, more efforts are needed to improve those proxies for development of economic growth. Also this indicates that the government of the east African countries need to corporate to see what can be done in order the three proxies used in this report to be the main factor that will affect or contribute to economic growth positively in each country of east Africa. According to Odhiambo (2011), the relationship between financial development and economic growth may be sensitive to the proxy variables used to represent financial development

The Governments of the east African countries together should improve the way of operating their financial system with encouraging operating environment, by doing so these countries will be able to support the economic positively by enabling domestic credit to be accessible easily, enhancing the level of deposits and also employments opportunities will be provided more to their people

There are several factors that might account for the differences between these countries in the direction of causality between financial development and economic growth, among these are; The selected proxies of financial development may not be proper for measuring economic growth in each country under study, the used types of data (time series data) may not also be suitable for this model. Also Different policies, laws and regulations followed by the countries under consideration. As according to Islam, Habib and Khan (2004), developing countries have their own socioeconomic, political and institutional history which makes them different from each other, and therefore existence of a reverse causality between finance and growth

(Levine, 2005), Said that although financial institutions and markets can foster economic growth through several channels, but since many market frictions exist and laws, regulations, and policies differ markedly across economies and over time, improvements along any single dimension may have different implications for resource allocation and welfare depending on other frictions in the economy.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

2.18 Summary

This study examined the causal relationship between financial development and economic growth in east African countries. The selected countries was three; Tanzania, Kenya and Uganda which represent the all east African countries over the years from 1987-2013. The study used granger causality test to test causality relationship and Vector auto regression to test the relationship .Three proxies of financial development used to measure annual growth rate which was a proxy of Economic growth. These proxies of financial Development are domestic credit to private sector, liquid liabilities and financial system deposits. The tests were done at the country level and the study at all level of findings revealed that there is no significant relationship between financial development and economic growth. The causal relationship outcomes for all three countries were different from each other. For Tanzania the causal relationship found to be bidirectional, Kenya the causal relationship runs from economic growth to financial development and for Uganda the causal relationship runs from financial development to Economic growth.

2.19 Conclusions

The causal relationship between financial development and economic growth for the countries under study between 1987 and 2013 was not related to each other. for Tanzania the result revealed bidirectional relationship meaning that policies , laws and regulation designed to enhance efficiency for financial institutions/sectors and economic growth have the same benefit to each other. For Kenya there is unidirectional relationship running from economic growth to financial development and for Uganda also the result showed unidirectional relationship but running from financial development to economic growth, none of the proxies of financial

development found to have a significant effect on economic growth in these countries.

Therefore one can simply say that the level of economic growth depends on the proxies used by the researcher for financial development. Thus domestic credit to private sector, liquidity liabilities and financial deposits might not contribute much to the growth of economies in east African countries because the result found insignificant relationship of financial development to economic growth in the countries under study

The result of Tanzania maintained the result found by Quin and Ndiege (2013), Pradha (2009), Calderon and Liu (2003) that the causal relationship between Financial Development and Economic growth is bidirectional, meaning that both financial development and economic growth make better to each other.

Using Domestic credit for Tanzania the result showed a positive insignificant relationship, it indicates that this proxy is a good measure of economic growth. But the insignificant means that there is a need of improving these domestic credit that given by banking institutions for the growth of economy in Tanzania.

Findings from Kenya revealed that it economic growth that leads to financial development. Also only one proxy of financial development (financial system deposits) showed a positive insignificant relationship between financial development and economic growth. This indicates that laws and regulation regarding the system of deposits in Kenya need to be improved so that financial development can contribute positive significant impact on economic growth.

For Uganda the report indicates that it is the financial development that leads to economic growth. And Liquidity Liabilities is the only proxy for Uganda that gave Positive relationship, meaning that the size of banking sector in Uganda need to be improved more for the economic growth

2.20 Recommendations

The selected proxies of financial development may not be the proper representative for measuring economic growth in this area and the used type of data (time series data) may not also be suitable for this model. The small value of coefficient of determination indicates that the proxies of financial development selected was not suitable for explaining and measuring economic growth in east African countries(less than 50%). Therefore more researches need to be done by using different proxies of financial development and use different types of data such as Panel data or cross sectional data to see if the result will remain as the current study's results.

There are different policies, laws and regulations followed by countries under consideration. Although the use of the same policies, laws and regulations may be difficult due to their own socioeconomic, political and institutional history which makes them different from each other but it is the way of making their economies and development of financial institutions equal all over the countries under study. Therefore the government and Policy makers should considered these results as a base of formulating of their future financial and economic policies, regulations and laws for all east African countries

Tanzania should support and improve their credit system by formulating suitable policy, laws and regulations for better economic growth and all financial development that exist should be developed and encouraged more for the improvement of the economic growth. Kenya should improve their financial system deposits and Uganda should continue improving more their Liquidity Liabilities in financial sector.

The east African countries should come together to review their policies, regulations and laws that restricts the operation of financial system and also should remove their barriers that hinder the effectiveness and efficiency operation of financial system in their countries so that the economic growth of east African countries are highly improved. Therefore policies makers in east African countries should make sure that

the formulation of laws that support financial systems in one country reflects to those of other countries in east Africa.

The Government of East African countries should provide relevant structures and environment for the smooth operation of financial institutions in these countries. With an improved operating environment, the financial sector will contribute positively to economic growth as it will provide more employment opportunities and make credit easily accessible to qualifying applicant and deficient units and also increase their deposit levels so that financial sector plays an important role in economic growth.

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APPENDICIES

A: ORIGINAL DATA

A1: Kenya

OBS	GDG	D C	LL	FSD
1987	5.9	28.953	28.642	23.393
1988	6.2	30.832	27.41	22.334
1989	4.7	31.381	26.722	22.494
1990	4.2	32.668	27.199	22.802
1991	1.4	33.748	28.748	23.5
1992	-0.8	34.841	32.347	26.084
1993	0.4	29.208	34.878	27.658
1994	2.6	29.271	36.511	29.462
1995	4.4	34.547	37.744	31.469
1996	4.1	26.972	32.432	27.573
1997	0.5	27.942	35.605	30.312
1998	3.3	27.339	36.101	30.596
1999	2.3	29.257	35.832	30.174
2000	0.6	28.43	35.157	29.525
2001	3.8	25.22	34.549	29.648
2002	0.5	25.863	36.454	31.653
2003	2.9	24.6	38.052	33.055
2004	5.1	26.792	37.854	33.097
2005	5.9	25.932	37.53	32.915
2006	6.5	22.722	38.111	33.546
2007	6.9	22.949	38.634	33.941
2008	0.2	25.381	42.008	37.189
2009	3.3	25.021	41.02	36.874
2010	8.4	27.228	45.125	40.52
2011	6.1	30.572	46.829	42.043
2012	4.6	29.582	38.424	34.742
2013	5.7	31.63	39.212	35.443

Source data: IMF ,world economic outlook Database and Word Bank Economic indicators records

A2: Tanzania

OBS	GDP	D C	LL
1987	0	0	17.933
1988	0	1.583	15.676
1989	3.8	14.06	16.484
1990	7	13.902	17.033
1991	2.1	14.03	18.048
1992	0.6	9.745	19.416
1993	1.2	10.797	22.953
1994	1.6	9.699	22.652
1995	3.6	6.655	22.655
1996	0.5	3.094	21.984
1997	3.5	3.545	19.554
1998	3.7	3.862	18.353
1999	4.8	4.184	18.046
2000	4.9	4.088	18.594
2001	6	5.381	17.235
2002	7.2	6.835	18.051
2003	6.9	8.083	18.52
2004	7.8	9.241	18.824
2005	8.2	10.181	21.204
2006	4.7	12.74	24.151
2007	8.5	11.651	25.346
2008	5.6	12.208	27.013
2009	5.4	11.459	29.215
2010	6.4	12.016	30.836
2011	7.9	12.732	32.266
2012	5.1	13.028	31.292
2013	7.3	13.098	29.033

Source data: IMF world economic outlook Database and Word Bank Economic indicators record

A3: Uganda

OBS	GDP	DC	LL	FSD
1987	4	0	5.906	3.043
1988	8.3	0	5.491	2.831
1989	6.4	0	4.594	2.606
1990	6.5	0	5.529	3.466
1991	5.6	0	6.08	4.06
1992	3.4	4.001	6.392	4.193
1993	8.3	4.426	8.442	5.565
1994	6.4	4.367	9.72	6.647
1995	11.5	4.59	10.258	7.017
1996	9.1	5.288	10.941	7.63
1997	5.1	4.832	11.734	8.506
1998	4.9	5.618	12.644	9.382
1999	8.1	6.355	13.704	10.187
2000	3.1	6.234	14.448	10.852
2001	5.2	7.106	15.279	11.632
2002	8.7	7.947	16.745	12.871
2003	6.5	8.4	18.247	14.137
2004	6.8	8.058	17.816	13.835
2005	6.3	8.616	18.018	13.948
2006	10.8	10.109	18.578	14.178
2007	8.4	10.232	18.71	14.271
2008	8.7	13.901	20.916	16.241
2009	7.3	11.579	21.146	16.792
2010	5.2	13.344	22.814	18.427
2011	9.7	15.441	26.1	21.058
2012	4.4	13.679	22.764	18.419
2013	3.3	13.502	22.913	18.744

Source data: IMF world economic outlook Database and Word Bank Economic indicators record

B: ORIGINAL DATA UNIT ROOT TEST RESULTS

BI: Kenya – original Data

```
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. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\ORIGINAL DATA COM\Kenya repeated data.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -3.135            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0241

. dfuller dc, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -2.060            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.2609

. dfuller ll, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -1.648            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.4580

. dfuller fsd, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -1.360            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.6012

. pperron gdp

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -14.237           -17.268           -12.532          -10.220
 Z(t)            -3.080            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0280

. pperron dc

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -7.117           -17.268           -12.532          -10.220
 Z(t)            -1.917            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.3242

. pperron ll

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -3.670           -17.268           -12.532          -10.220
 Z(t)            -1.573            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.4973

. pperron fsd

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -2.387           -17.268           -12.532          -10.220
 Z(t)            -1.278            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.6393

.
```

BI: Tanzania– original Data

```
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. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\ORIGINAL DATA COM\Tanzania repeated.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -2.607           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0916

. dfuller dc, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -2.410           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.1389

. dfuller ll, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -0.335           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9204

. dfuller fsd, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -0.251           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9321

. pperron gdp

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)           -8.724          -17.268           -12.532         -10.220
 Z(t)             -2.479           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.1208

. pperron dc

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)           -9.699          -17.268           -12.532         -10.220
 Z(t)             -2.557           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.1023

. pperron ll

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)           -1.473          -17.268           -12.532         -10.220
 Z(t)             -0.686           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.8502

. pperron fsd

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)           -0.737          -17.268           -12.532         -10.220
 Z(t)             -0.474           -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.8970
```

B3: Uganda –Original data

```
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. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\ORIGINAL DATA COM\Uganda repeated.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -4.745            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0001

. dfuller dc, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -0.810            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.8161

. dfuller ll, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -0.415            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9076

. dfuller fsd, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(t)             -0.345            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9189

. pperron gdp

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)         -25.566           -17.268           -12.532         -10.220
 Z(t)            -4.744            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0001

. pperron dc

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)          -0.709           -17.268           -12.532         -10.220
 Z(t)            -0.633            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.8633

. pperron ll

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)          -0.280           -17.268           -12.532         -10.220
 Z(t)            -0.324            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9220

. pperron fsd

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical     10% Critical
               Statistic           Value             Value           Value
------------------------------------------------------------------------------
 Z(rho)          -0.207           -17.268           -12.532         -10.220
 Z(t)            -0.260            -3.743            -2.997          -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9310
```

C: UNIT ROOT RESULTS AFTER DIFFERENCIATION

C1: Kenya results

```
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. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\DIFFERENTIAL COM\Ken
> ya Diff data com.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)
Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -5.921       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller dc, lags(0)
Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -6.597       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller ll, lags(0)
Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -5.535       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller fsd, lags(0)
Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -5.720       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron gdp
Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -26.622      -17.268           -12.532          -10.220
 Z(t)            -6.244       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron dc
Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -31.041      -17.268           -12.532          -10.220
 Z(t)            -6.869       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron ll
Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -27.293      -17.268           -12.532          -10.220
 Z(t)            -5.589       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron fsd
Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ---------------
                 Test    1% Critical       5% Critical      10% Critical
               Statistic     Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -28.052      -17.268           -12.532          -10.220
 Z(t)            -5.796       -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

.
```

2.21 C2: Tanzania result

```
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. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\TANZ SECOND DIFF\Tan
> z   Second Diff data com.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -7.041            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller dc, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -4.400            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0003

. dfuller ll, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -6.649            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller fsd, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -5.475            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron gdp

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -31.897           -17.268           -12.532          -10.220
 Z(t)             -7.555            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron dc

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -23.884           -17.268           -12.532          -10.220
 Z(t)             -4.419            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0003

. pperron ll

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -32.758           -17.268           -12.532          -10.220
 Z(t)             -6.753            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron fsd

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)          -26.979           -17.268           -12.532          -10.220
 Z(t)             -5.532            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000
```

C3: Uganda results

```
  ___  ____  ____  ____  ____ (R)
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Notes:
      1.  (/m# option or -set memory-) 50.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables

running E:\STATA 11.1\profile.do ...

. insheet using "C:\Users\DOROTH HAKI\Desktop\current data\DIFFERENTIAL COM\Uga
> nda Diff data com.csv"
(5 vars, 27 obs)

. tsset obs, yearly
        time variable:  obs, 1987 to 2013
                delta:  1 year

. dfuller gdp, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -4.745            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0001

. dfuller dc, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -7.038            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller ll, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -5.606            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. dfuller fsd, lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        26

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)             -5.535            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron gdp

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -25.566           -17.268           -12.532          -10.220
 Z(t)            -4.744            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0001

. pperron dc

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -31.729           -17.268           -12.532          -10.220
 Z(t)            -7.536            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron ll

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -27.138           -17.268           -12.532          -10.220
 Z(t)            -5.689            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

. pperron fsd

Phillips-Perron test for unit root                 Number of obs   =        26
                                                   Newey-West lags =         2

                         ------------ Interpolated Dickey-Fuller ------------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(rho)         -26.681           -17.268           -12.532          -10.220
 Z(t)            -5.614            -3.743            -2.997           -2.629
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

.
```

D:VECTOR AUTO REGRESSION (VAR) RESULTS

D1: Tanzania result

GDP	**Coef.**	**Std Err**	**t**	**p>|t|**	**[95% Conf. Interval]**	
dc	.2669545	.1668082	1.60	0.123	-.0781146	.6120236
ll	.2016873	.5723301	0.35	0.728	-.9822677	1.385642
fsd	-.5620616	.7596936	-0.74	0.467	-2.133608	1.009484
cons	**.1202507**	**.4383742**	**0.27**	**0.786**	**-.7865954**	**1.027097**

D2: Kenya result

GDP	**Coef.**	**Std Err**	**t**	**p>|t|**	**[95% Conf. Interval]**	
dc	-.196904	.2123328	-.093	0.363	-.6361479	.24234
ll	-1.130116	1.150718	-0.98	0.336	-3.510558	1.250326
fsd	1.39458	1.379773	1.01	0.323	-1.459698	4.248858
cons	**-.1678612**	**.5408678**	**-0.31**	**0.759**	**-1.286732**	**.9510091**

D3: Uganda result

GDP	Coef.	Std Err	t	p>|t|	[95% Conf. Interval]	
dc	-.2228461	.3946043	-0.56	0.578	-1.039147	.5934551
ll	3.87245	2.194641	1.76	0.091	-.6675106	8.412411
fsd	-3.978173	2.684434	-1.48	0.152	-9.531348	1.575002
cons	**6.726348**	**.537693**	**12.51**	**0.000**	**5.614045**	**7.838651**