



The Nexus between Financial Development and Economic Growth in Ethiopia

A Thesis Submitted to the Department of Accounting and Finance to Undertake
a Research in Partial Fulfillment of the Requirements for the Master of Science
(MSc) Degree in Accounting and Finance

By: MeronEndris

ADDIS ABABA UNIVERSITY
SCHOOL OF BUSINESS AND ECONOMIC SCIENCE
DEPARTMENT OF ACCOUNTING AND FINANCE

MARCH, 2016

ADDIS ABABA, ETHIOPIA

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DECLARATIONS

I, Meron Endris, have carried out independently a research work on “The Nexus between Financial Development and Economic Growth in Ethiopia” in partial fulfillment of the requirement of the M.Sc program in Accounting and Finance with the guidance and support of the research advisor.

This study is my own work that has not been submitted for any degree or diploma programs in this or any other institution, and that all references materials contained therein have been duly acknowledged.

Name: Meron Endris
Advisor's Name: Habtamu Berhanu (Phd)

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Approval Sheet

This is to certify that the thesis prepared by MeronEndris, entitled: The Nexus between Financial Development and Economic Growth in Ethiopiaand submitted in partial fulfillment of the requirements for the degree of Master of Science inAccounting and Finance complies with the regulations of the University and meets the acceptedstandards with respect to originality and quality.

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Internal examiner: Dr. _____ Signature _____ Date _____

External examiner: Dr. _____ Signature _____ Date _____

Advisor: **HabtamuBerhanu(Phd)** Signature _____ Date _____

Abstract

The paper examined the empirical relationship between economic growth and financial development in Ethiopia over the period 1980–2014. The long-run and short-run parameters were estimated with a use of autoregressive distributed lag (ARDL) bounds testing approach for co integration analysis. To determine the direction of causality, Granger causality analysis was done. Empirical findings indicate, there is long-run association between economic growth and proxy of financial deepening, broad money and private sector credit while proxy of financial widening, trade openness has positive significant relationship with economic growth but financial liberalization has negative significant association with economic growth. The overall result indicates economic growth has a significant positive effect on financial development. The magnitude of the ECT coefficient is -0.8545 justified about 85% of the disequilibrium annually converge towards long run equilibrium in the following year. The Granger causality test is consistent with the co-integration result indicating uni-directional causality between financial development and economic growth in Ethiopia for the period under study. The result supports demand following hypotheses; means that economic growth is leading to the financial sector development in Ethiopia. Hence, confirm the heavy hand of the government in the financial sector.

Keywords: *financial development, economic growth, ARDL bounds test, cointegration, granger causality*

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List of Acronyms

AICAkaike Information criterion

ADF Augmented Dickey Fuller

ADRLAutoregressive Distributed Lag

CUSUM Cumulative sum of recursive residuals

CUSUMQ Cumulative sum of squares of recursive residuals

DW Durbin-Watson Statistic

ECTError correction term

GTP Growth and Transformation plan

LRGDPLog of real gross domestic product

LM2Log of broad money

LPCLog of private credit

LTOPLog of trade openness

LFLLog of financial liberalization

MOFECMinistry ofFinance and Economic Cooperation

NBENational bank of Ethiopia

CHAPTER ONE

INTRODUCTION

This chapter deals with the introductory part of the study. It includes: background information, statement of the problem, basic research questions, objectives, significance, scope, limitation and organization of the study.

1.1. Background of the Study

One of the issues economists have debated on is the role of financial development on economic growth. It has been confirmed by studies of (King & Levine, 1993; Goldsmith, 1969; Ndebbo, 2004; Goldsmith, 1973; McKinnon, 1973; Shaw, 1973) is that financial development has a positive impact on economic growth. Since the pioneering work of (Schumpeter 1911), a lot of both theoretical and empirical literature has been developed arguing importance of finance on economic growth. The findings of the study showed that financial institutions contribute to economic growth by identifying and redirecting funds towards innovative projects. (Schumpeter 1911) arguments were supported by (McKinnon 1973) and (Shaw, 1973), who argued against financial repression, adopted by many developing countries In the 1970s and 1980s. They argued that the government's controls on financial sector such as setting maximum interest rates requiring huge amount of reserve requirements and directing credit programs deter both financial development and economic growth of the country. High interest rates attract savings. With high amounts of savings, commercial banks will have more credit which they can supply to the private sector for investment; this impacts economic development positively.

Financial development contributes to economic growth by stimulating investment in the country through the level and efficiency effects. The efficiency effect argues that the reforms and regulations in the financial sector ensure transparency and proper reporting systems within the sector; this ensures investors confidence thus, attracts both domestic and foreign investors. In addition, the efficiency effect argues that financial sector allocates financial resources to the most profitable projects. The efficiency effect implies that financial development and economic growth are positively correlated.

A developed financial sector improves the efficiency and effectiveness of financial institutions and also promotes financial innovations within the sector. This promotes economic

development. The financial sector is said to develop when: financial inclusion increases, the sector's stability increases, the amount of money that is intermediated by the financial institutions within the country increases, the number of financial institutions increase, the number of services or products offered increase and improve, the sector becomes more competitive and more efficient (DFID, 2004). This means there is no single measure that can include all dimensions of financial development. One way which can enable a country to achieve high economic growth is by building a capacity to mobilize financial resources and by ensuring their efficient allocation to the projects with highest returns. The financial sector does this role by mobilizing savings and allocating these resources to the most productive projects. Other roles of the financial sector that promote economic growth include risk management, obtaining information on investment opportunities, facilitating the exchange of goods and services, facilitating and encouraging inflows of foreign direct investment, amelioration of information asymmetries, among others (Levine, 1997; DFID, 2004).

Although research in the area of the relationship between financial development and economic growth abound both in advanced and developing countries, the direction of causality has not been resolved. From the findings, it is not clear whether financial development is the cause of economic growth or economic growth is cause of financial development. Several views on the direction of causality between financial development and economic growth have been observed and yet studies have been drawing different views.

‘Supply leading’ view hypothesis, that financial development cause economic growth. It asserts that the financial sector mobilizes savings, allocates resources efficiently, mitigates the problem of asymmetric information, monitors firms, manages risk and reduces transaction costs among others; all these, according to the hypothesis contribute positively to economic growth. (King and Levine 1993) argue that financial institutions increase capital accumulation and also influence the productivity of the factors of production positively; they opine that these two roles are critical in stimulating economic growth. This view is also supported by (Patrick 1966) who argues that financial sector stimulates economic development by mobilizing savings and redirecting them to the highest rates of return on investment.

In opposition to the above postulation is the ‘demand following’ hypothesis; it suggest that it is economic growth that cause financial development. It concludes that the growth of financial sector is in response to the demand created by economic development of a country (Robinson, 1952; Gurley & Shaw, 1955; Goldsmith, 1969; Patrick, 1966). Thus, as the demand for financial services increase, inducement for growth of the financial sector results from the

economic growth. This means that the factors that determine economic growth are not within the confines of the financial sector.

The other view is that there is bi-causality (feedback hypothesis) between financial development and economic. It argues that while economic growth can cause financial development, financial development can also lead to economic growth. This argument supports both the supply leading and demand following hypotheses (Demetriades & Hussein, 1996; Greenwood & Smith, 1997). The last view is that financial development and economic growth are independent (Lucas, 1988). This means they are not correlated in any way. Factors that explain the development of the economy or the financial sector are elsewhere.

Ethiopia has achieved economic growth of 10.8 on average for 10 years where as the financial sector largely Shows Symptoms of repression and isolation from the rest of the world financial sectors. This trigger a question on any one's mind that does the demand following hypothesis prove to be write. Based on the arguments stated above the researcher is motivated to this study the hypothesis of demand following in order to carry out research the study is structured in five chapters; the first chapter is the introduction section which includes the statement of the problem, objective of the study, significance of the study, scope and limitation, and organization of the study. The second chapter deals with review of related literature while the third chapter is dedicated to the research design of the study. The forth chapter present the analysis and discussion of the results for the study. Finally, the last chapter presents the conclusions and recommendations for the study.

1.2. Statement of the problem

From a theoretical standpoint, different approaches have been applied in investigating the finance growth nexus. For example, (Schumpeter 1911) argued that a well-performing banking system can contribute to economic growth through the technological innovations that may occur as a result of the efficient allocation of funds. In contrast, (Robinson 1952) exposed that financial development is a result of improvements in economic performance. Accordingly, the first perspective is called the 'supply leading' hypothesis while the second is called the 'demand following' hypothesis (Patrick, 1966).

Even though the direction of causality has received much attention from researchers, the nature of this causal relationship remains vague (Calderon and Liu, 2003). As countries' characteristics differ (such as political history, economic history, culture, institutional arrangements, level of financial development, role of financial institutions etc.), so too can be

causal relationship between financial development and economic growth. Empirical studies which support the ‘supply-leading’ hypothesis that is, the unidirectional causation that runs from financial growth to economic growth include, McKinnon, 1973; King and Levine, 1993; Neusser and Kugler, 1998; Levine, 2000; Majid and Mahrizal, 2007; Odhiambo, 2007; Quartey and Prah, 2008; Balamoune-Lutz, 2008; Gries, 2009; Ang, 2009; Jalil and Feridun, 2010; Gries, 2011; Shahbaz, 2013; Uddin, 2013.

On the other hand, the ‘demand-following’ hypothesis that is, the unidirectional causation running from economic growth in financial development has been Proved by the findings of Gurley and Shaw, 1967; Goldsmith, 1969; Atindehou 2005; Ghirmay, 2004; Levine, 2005; Odhiambo, 2007; Majid and Mahrizal, 2007; Odhiambo, 2007; Ang, 2008; Demirgüç-Kunt and Levine, 2008 and Quartey and Prah, 2008; Odhiambo, 2008; Handa and Khan, 2008; Gries, 2009; Odhiambo, 2009; Odhiambo, 2010; Gries, 2011.

In contrast to the above, several other studies have documented the bidirectional relationship between financial development and economic growth Greenwood and Smith, 1997; Blackburn and Hung, 1998; Blackburn, 2005; Majid, 2007; Majid and Mahrizal, 2007; Ang and Mckibbin, 2007; Handa and Khan, 2008; Singh, 2008; AbuBader and Abu-Qarn, 2008; Gries 2009; Wolde-Rufael, 2009; Jenkins and Katircioglu, 2010; and Gries, 2011.

While studies conducted in developing nations support the widespread existence of both bidirectional and unidirectional causality between the variables, others such as Ram 1999; De Gregorio and Guidotti, 1995; Change, 2002; Majid and Mahrizal, 2007; and Gries, 2009 argue that there is no causality between financial development and growth.

Kiyota, (2007) stressed the closed nature of the Ethiopian financial sector in which there are no foreign banks, a non-competitive market structure, and strong capital controls in place. As well as dominant role of state owned banks which is the cause for inefficiency and also deter economic growth (La Porta, Lopez-de-Silanes, and Shleifer 2002. Levine, Loayza, and Beck 2000) found that greater financial intermediation development had a significantly positive impact on economic growth. (La Porta, Lopez-de-Silanes, and Shleifer 2002) found that higher government ownership of banks resulted in lower per-capita GDP growth even when initial financial intermediation development had a positive and significant effect. Furthermore Ethiopia is a unique country among the Sub Saharan African country by not having a capital market and very limited informal investing in shares of private companies. Though different studies endorsed the establishment of the market in the country the authorities in charge

remained indifferent to the views.

The fact remains the country's GDP continued to grow on average of 10.8% over the last ten years which is quiet puzzling for many observers who support supply leading view. Basically the intention of this research is to find out the nexus between financial development and economic growth which is a contentious issue which has stimulated a lot of research. A wealth of literature has addressed this issue by cross-country or time series analysis, as exemplified by, (Masoud and Hardaker 2012, Lanyi and Saracoglu 1983 and Roubini and Sala-i-Martin 1992). These studies usually provide important policy implications especially for developing countries which are under researched.

Although many studies on finance-growth nexus have been done in both developing and advanced countries, Notably Ethiopia has not featured in the cross country studies that have included some of the Sub Saharan African countries. Single country studies have also been carried out in other Sub Saharan African countries like Zambia, South Africa, Nigeria, Ghana and Zimbabwe and Namibia similar studies in Ethiopia haven't been conducted since 2006 G.C according to the researcher's knowledge. This is despite the realization that causal links between financial development and economic growth is of importance for the designing of development strategies in Ethiopia.

This study in detail investigates the relationship between financial development and economic growth using time series data of over the period 1980–2014 G.C. Furthermore several developments have taken place in the financial sector in Ethiopia since the banking sector reform that may affect this relationship. Notable among such changes include financial reforms; which have increased the number of the financial institutions, the sector has evolved since the past research and there have been several financial innovations that would change the status quo since then.

Hence Based on the above context the study will try to assess the following basic research questions:

1. What types of a relationship exist between financial development and economic growth in Ethiopia?
2. Which financial variable contributes more for the economic development?
3. How does the financial variable affect the economic development in Ethiopia?

1.3. Objectives of the Research

The research has the following general and specific objective.

1.3.1. General objective:

The general objective of this paper is to investigate the dynamics relationship between financial development and economic growth using time series data over the period 1980–2014.

1.3.2. Specific objectives:

In view of the general objective this paper attempts to achieve the following specific objectives:

- i. To determine econometrically the causal links between financial development and economic growth in Ethiopia.
- ii. To establish how financial development and economic growth influence each other.
- iii. To highlight policy options to the policy makers need to consider.

1.4. Research Hypothesis

In order to achieve the broad objective of the study, the researcher developed the following three testable hypotheses (Hp1-Hp4):

HP1: There is a positive relationship between financial deepening and economic growth (GDP).

HP2: There is positive relationship between financial widening and economic growth (GDP).

HP3: There is a positive relationship between financial liberalization and economic growth (GDP).

HP4: There is a unidirectional relationship that runs from economic growth to financial development (demand following hypothesis).

1.5. Methodology of the study

In order to achieve the objective of the study and to test the proposed hypotheses descriptive research approach through the use of 35years of time series data be adopted.

The study employed quantitative research approach using secondary data gathered from the Ministry of Finance and Economic Cooperation and National bank of Ethiopia data and

different publications of both NBE and MOFEC for Macroeconomic variables.

Finally, the data obtained through the above mentioned data sources analyzed through E-views 9 software package. The detail of the methodological aspects is discussed in chapter three of this study.

1.6. Significance of the Study

It is hoped that findings and future research directions of the study can be useful to broaden the understanding of nexus between financial development and economic growth empirically which is expected to aid the policy makers understand and examine the empirical evidence while designing a policy. It will also benefit the policy makers to modify or come up with the policies that will better suit the country. Finally, the research findings also add knowledge in the field of finance. Moreover, this study can be taken as reference for those who will undertake a study on the area of financial developments impact on economic growth.

1.7. Scope and Limitations of the Study

The study has its own scope and limitations as it is presented below.

1.7.1. Scope of the Study

The scope of this study was limited in terms of coverage and method. With regard to coverage, it was limited to the Ethiopian economy as well as financial activities that has undertaken countrywide. In terms of time, it covers the time period 1980–2014 G.C.

The study adds value to the previous studies in Ethiopia by using more recent data, controlling for other factors that affect growth and using a methodology of the ARDL bounds test for co-integration. The study also distinguishes between long-run and short run causality. This is because the effects of high financial development can be realized in the short-run but in the long run they may disappear (Darrat, 1999).

1.7.2. Limitation of the Study

Every study conducted may have certain shortcomings. When conducting Preliminary search for data there occur some constraints that affected the research work. The major constraint of the problem involves the data availability cannot be assessed quarterly data, that could give a better data points for the study, cannot be observed since it is inexistent. It is hoped the available data points would be able to portray the reality.

1.8. Structure of the Study

The paper organizes into five chapters. Chapter one presents introduction of the study. The literature review part of the study is presented in chapter two. The review of the literature includes the theoretical review in its first section which is followed by the review of the previous studies related to the area and summary and concluding remarks finally. Chapter three presents the research design and model specification. This is followed by an analysis of the results and discussion part of the paper concurrently in chapter four. Finally, chapter five presents the conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

The first chapter introduced the problem to be investigated in this study along with purpose and research hypothesis. In order to put the study within the context of the existing literature, the subsequent section of this chapter present the review of both theoretical and empirical studies related to financial development and economic growth.

2.2. Theoretical Background

The theoretical framework section is the starting point for this chapter. It presents the background theories, up on which the study relies. The researcher presents the basic concepts first, such as theory of economic growth, issues related to the financial development and economic growth and roles and measurement of financial system in economic growth. The impact of financial development on economic growth, then after, the researcher focuses on different viewpoints and relationship and casualty of financial development and economic growth are discussed, and finally the study presents conceptual framework and summary and concluding remarks.

2.2.1. Theory of Economic Growth

Major strategic decisions and activities are carried out with the sole purpose of enhancing a country's economic growth. Substantial research is conducted to get a sense to what actually can cause a country's economy to experience a maintained growth spurt. The knowledge of the determinants of economic growth can specify areas where should be invested in by all stakeholders. Economic growth is a result of several different macroeconomic policies and institutional conditions of a country. The characteristics of the economic environment where companies engage in business transactions are determinant factors for the development of an economy (OECD, 2004).

In the modern literature on economic growth, Solow (1956) and Swan (1956) are now the basic point of reference in considering a growing population coupled with a more efficient labour force. This direction has dominated the theories of long-run economic growth, and the model is based on a constant return to scale production function.

The Solow model investigates the effects of the division of output between consumption and

investment on capital accumulation growth. The direct consequence of this approach is the strong ties between long-run growth rates and demographic factors, such as the growth rate of the population, the structure of the labour force and productivity growth. These factors are all taken to be exogenously determined and are postulated to explain the steady-state level of income per capita. Technology is also assumed to progress at an exogenous rate. Hence, the only policies that can contribute to long-run growth are those that can increase the growth of the population or the efficiency of the labour force. The Solow model focuses therefore on four variables. In the production function, output (Y) is given by capital (K), labour (L) and 'knowledge' or the 'effectiveness of labour' (A). Thus, the standard Solow Cobb-Douglas production function is given by $Y = Ae^{mt} K^a L^{1-a}$, $0 < a < 1$. The exogenous rate at which the technology grows is given by e^m (Pack, 1994). The function is combined with a fixed saving rate to give a simple equilibrium of the economy.

One of the main arguments we can derive from this literature is the need for technological progress to accomplish sustained economic growth. However, the theory does not explain what causes this technological progress, and technology is therefore seen as an exogenous condition in the model. If we want to determine the behavior of the economy, the evolution of two of the three inputs in the production output, namely labour and knowledge, is exogenous. The behavior must therefore be analyzed from the third input, capital. Even though the Solow model is a basic reference point, endogenous growth theory provides a review of the model. The understanding of the mechanisms which encourage growth is an important condition for promoting economic growth processes. An important condition is the fact that knowledge and technology are not developed in a vacuum, but in interaction with physical capital. This is of importance in understanding how growth processes can be stimulated. Another implication of the Solow model is that it indicates that, regardless of the initial per capita stock, all countries will converge to same steady state rate and a similar standard of living 'in the long run'. This is the hypothesis of convergence.

2.2.1.1. Convergence

Convergence or the question of whether poor countries tend to grow faster than rich countries, has attracted considerable attention in the work on growth. Due to the diminishing marginal return to capital, countries with low levels of capital stock will have higher marginal product of capital, and thereby grow faster than those with already high levels of per capita capital stock, given similar saving rates. The Solow model predicts that countries converge to their balanced growth paths and the model expects that the poorer countries catch up with the richer ones.

Solow's assumption is that an economy eventually reaches a steady state where per capita output, capital stock, and consumption grow at a common constant rate that is equal to the rate of technological progress.

The strongest prediction in the convergence debate is called unconditional convergence, which expects that in all countries, capital per efficiency unit of labour converges to the common steady state level and a similar standard of living 'in the long run'. This will happen irrespective of the initial state of each economy. The model implies that an economy with low capital stock per inhabitant in general would have a higher return of capital: hence, a higher yearly growth rate than economies where the capital stock per inhabitant is high. The presence of convergence is determined by a strong negative relationship between growth rates of per capita income and the initial value of per capita income. In the extended model of (Barro 1991), there are incentives for capital to flow from rich to poor countries.

However, there have been objections to the prediction of unconditional convergence. The obvious weak link in the prediction is the assumption that across all countries, the level and change of technical knowledge, the rate of savings, the population growth rate, and the rate of depreciation are all the same. The opponents of the unconditional convergence theory have argued that countries must converge to their steady states. The neoclassical growth theory includes the fact that different countries can reach different steady state rates, and there is no need for two countries to converge to each other. This weaker hypothesis leads to the notion of conditional convergence. (Mankiw, Romer and Weil 1992) have introduced an extended Solow model and they argue that Solow did not predict that all countries would reach the same level of per capita income, but rather their respective steady state.

Conditional convergence is present if the growth rate of per capita income is negatively correlated with the initial value of per capita income, conditional on some fixed variables. Different economies can only converge to the same steady state rate if they have the same rate of savings, depreciation rate, population growth and rate of technology. In the literature, (Barro 1991 and Mankiw 1992) support the theory of conditional convergence.

2.2.1.2. Endogenous Growth Theory

The basic Solow model serves as a foundation for more sophisticated models. Even though the Solow model is a good framework, new theories have emerged in response to some of the heroic assumptions of the model. The Solow model shows that technological improvement is the only source of continual growth. Therefore, it is important for understanding economic growth to

recognize what drives technological progress. This is the starting point of the ‘endogenous growth theory’. The endogenous growth theory emerged in the 1980s, where (Romer 1986) and (Lucas 1988) have been important contributors. This theory distinguishes itself from the neo-classical theory by emphasizing that technological progress is an endogenous outcome of an economic system, not the result of forces that impinge from outside. Romer has specified an equilibrium model of endogenous technological change, arguing that long-run growth primarily is driven by accumulation of knowledge. The new direction does not emphasize the concept of convergence, and is based on either constant or increasing returns to scale in capital, postulating a growth in the gap between poor and rich countries. They do not rely on an unexplained source of technical change as the engine of growth, but focus on the existence of a variety of endogenous variables that spur economic growth. Since technology or knowledge improvements can work as a source of continual growth, the new growth theory includes knowledge and technology as independent factors in their models.

The essence of many of the endogenous growth theories is reflected in an AK-equation (Pack, 1994). In the equation, output is affected by A , factors that affect technology, and K , which includes both human and physical capital. Another interpretation is that K represents the variety or quality of inputs. For example, by using financial variables as endogenous variables to promote technological progress, it is possible to accelerate economic growth. Besides finding new ways in which endogenous technological changes and endogenous variables, like, for example, the development of the financial sector can affect economic growth, the theory revives interest in long-term economic growth.

2.2.2. Financial development

Financial development can be defined as the policies, factors, and the institutions that lead to the efficient intermediation and effective financial markets. A strong financial system offers risk diversification and effective capital allocation. The greater the financial development, the higher would be the mobilization of savings and its allocation to high return projects. (Levine 1993) emphasized to consider the importance of financial sector in economic growth.

Financial development can be measured by a number of factors including the depth, size, access, and soundness of financial system. It can be measured by examining the performance and activities of the financial markets, banks, bond markets and financial institutions. It is observed that higher the degree of financial development in a country, the wider will be the availability of financial services. A developed financial system offers higher returns with less

risk(Noureen, 2008).

Antzoulatos (2008) asserted that the degree of asymmetric information reduces with the development of financial system. Developed financial systems offer specialized services and efficient operations that help to reduce information asymmetry in the market. Investors can trust and put more faith in the experienced forecasts of the financial intermediaries in developed financial systems. In this way the value and trust of information raises and more investments can be attracted.

2.2.3. The Functional Approach and the Role of Financial Development

In recent times many models have been developed to show how a well developed financial system may lead to economic growth. Mainly the 1990s endogenous growth models have revitalized the role of financial system and gained them a wide spectrum. (Levine 1997), in his study of finance and growth ties, use two possible channels namely capital accumulation and technologic al innovation through which financial system may affect growth. By providing the financial functions (which I return to later on), the financial system affects capital accumulation either by altering the saving rate or by reallocating savings among different capital producing technologies, and the rate of technological development by supporting the innovation of new production technologies.

Financial development is the process whereby the quality and quantity of financial services provided by the financial structure the mix of financial instruments, markets and institutions have upped to ameliorate the problems posed by market frictions. It involves improvements in producing information ex-ante about possible investment opportunities and allocating capital, monitoring firms and exerting corporate governance (ex-post function), facilitating the trading, diversification and management of risk, mobilization and pooling of savings, and facilitating the exchange of goods and services. By providing these services, the financial system captures the real variable status in economic growth models (Levine, 1997).

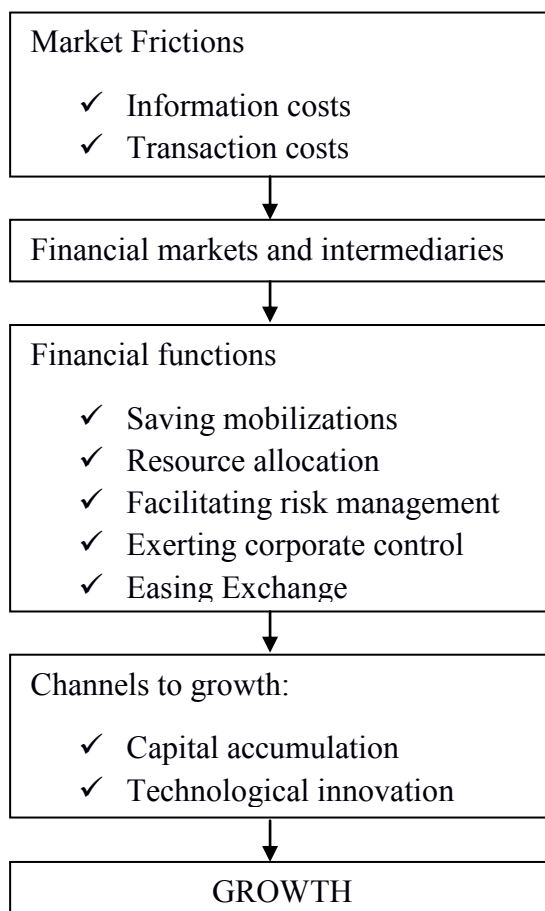


Figure 1: A Functional Approach to the Theory of Finance and Growth Source: Levine, 1997.

2.2.4. Measurement of Financial Development

The main issues of financial development raises some important questions i.e. why some countries have so much bigger capital markets as compare to others, e.g. why the United Kingdom and United States have huge financial markets, whereas countries like France and Germany have comparatively smaller financial markets. Why Japan and Germany have enormous banking systems as compare to the other wealthy economies? There are some significant reasons for the different levels of development in different countries (Noureen, 2008).

2.2.4.1. Legal Matters

La Porta, (1997) examine 49 economies and studied the investor protection rights. Quality of law enforcement and character of legal laws both are studied in this regard. It is considered that countries with weak investor protection rights have small and very narrow equity and debt markets. It is also observed that countries with French civil laws have weak investor's protections as well as least developed capital markets. In contrast the situation is different in

case of countries with common laws. These countries are found with developed and big capital markets.

Private property rights are important to structure the foundation of financial development. Legal origins matters in terms of the differences in the abilities to adjust efficiently in the developing socioeconomic conditions. Countries with efficient adapting legal systems that minimize the gap between financial needs of the economy and the capabilities of the legal systems help to flourish financial development (Beck, 2002).

2.2.4.2. Policy Matters

Financial policy making is one the most important issues related to financial development. (De La Torre, 2007) studied the requirement of policy thinking for financial development. The three main areas identified to achieve strong and deep financial systems included, strong stock markets, financing of small and medium enterprises, and defined contribution of pension system. The governments are required to provide best mechanism for the provision of efficient mobilization of resources, and risk allocation. Another important responsibility of government is the implementation of sound prudential regulation including appropriate accounting procedures and supervisions. This can help a country to avoid financial crises and alleviate costs without increasing moral hazard. Government is also required to facilitate for the provision of institutional and informational environment. Finally it is suggested that to achieve high levels of financial development the governments must focus upon the flexible and shock proof exchange rates , a local strong currency to be used as a store of savings, and the a strong regulatory environment where the enforcement of contracts and operations of the contracts can flourish. Financial globalization is unfolding in an environment where all major currencies are permitted to float freely against each other. It is recommended that flexible exchange rate regimes should be applicable to attain the benefits of financial globalization and coping with the risks and threats attached to it (Bordo, 2000).

2.2.4.3. Financial Openness and Financial Development

Financial liberalization is the capital account openness and deregulation in the domestic financial markets. There are mixed views in this regard. According to some studies financial openness helps to build up the strong financial system and to achieve higher targets of growth. On the other hand it may incur a lot of risk taking and can increase macroeconomic volatility in an economy. The results of financial liberalization in middle income and low income countries are also found quite different. Financial liberalization has helped achieve high growth rates in

middle income countries whereas in case of low income countries the results are opposite. One main reason for this can be because low income countries do not have developed financial systems to allow them for a significant increase in leverage and financial flows.

Beckaert,(2005) asserted that equity market liberalization leads to 1% increase on average in annual real economic growth. It is unlikely to have the same effects of liberalization in all countries due to the quality of institutions, comprehensiveness of reforms, legal environment, the investment conditions and the degree of financial development.

An openness index is created in 2007 by Chinn and Ito that measure the openness in capital account transactions. The index is constructed on the basis of 181 countries from 1970 to 2005. KAOPEN index is constructed based upon the International Monetary Fund AREAER (Annual Report on Exchange Arrangements and exchange Restrictions) tabulation to determine the intensity of the capital controls. AREAER presents information regarding the rules and regulation for the external account transactions in different countries. It is found that the world is moving steadily towards greater financial openness. Industrialized countries maintained high level of financial openness all over the period and steadily improved the levels since the 1970's. Both the less developed and emerging market countries have accelerated financial opening since the 1990's. It is also reported that there is great variation between the pace and patterns in the different regions for financial openness.

2.2.5. Financial Repression

Financial ‘repression’, the term coined by (McKinnon 1973 and Shaw 1973), refers to a state where the financial sector is highly regulated and distorted by the government through various measures. Interest rate ceilings on bank deposits and loans, compulsory credit allocation, heavy reserve requirements, and various types of prohibition on international financial transactions are common features of a repressed financial system. In such a repressed state, real deposit rates of interest are often negative, and foreign exchange rates also become highly uncertain (McKinnon, 1991).

Roubini and Sala-i-Martin (1995) assert that governments repress financial development by not allowing the financial sector to operate at its full potential by introducing all kinds of regulations, laws, and other non-market restrictions to the behavior of banks and other general financial intermediaries.

In a repressed financial sector, the reserve requirements provide an important means of forced borrowing from the private sector, and preferred borrowers receive heavily subsidized credit from the banking

sector. The deposit rate of interest is fixed by government regulation, so that it can no longer adjust to bring about a savings investment balance. Actual investment is only about 80 percent of desired investment at existing inflation and interest rates (Lewis, 1992).

Fry

(1980) interprets financial repression as the technique of holding institutional interest rates, particularly deposit rates of interest, below their market equilibrium levels.

The McKinnon and Shaw school argue that financial repression inhibits growth as it fragments the domestic capital market, adversely affecting the quality and quantity of real capital accumulation (McKinnon, 1988; McKinnon, 1993). They stated the following four main channels through which financial repression negatively affects capital accumulation and hence growth (Ucer, 1997):

- *The flow of loanable funds via the organized banking system decreases forcing investors to rely more on self-finance;*
- *Interest rates on the truncated flow of bank lending vary from one class of favored or disfavored borrower to another;*
- *The process of self-finance itself is impaired. If real deposit interest rate is negative, firms can't easily accumulate liquid assets in preparation for making discrete investments and socially costly inflation hedges look more attractive as a means of internal finance;*
- *Significant financial deepening outside of the repressed banking system becomes impossible when firms are dangerously illiquid and/or inflation is high and unstable; robust open markets in stocks and bonds, or intermediation by trust or insurance companies, require monetary stability.*

2.2.6. Financial Deepening

'Financial deepening', which is measured as a ratio of financial assets or broader monetary aggregates to the gross domestic product (GDP), refers to the greater financial resource mobilization in the formal financial sector, and the ease in liquidity constraints of banks and enlargement of funds available to finance projects (Fisher 1993). High financial deepening creates a favorable environment for increased resource deployment in the economy, which in turn can lead to an accelerated economic growth.

Economic activities in the country can be greatly facilitated by modern banking services.

Financial deepening involves the introduction and intensive use of new financial products. In the past, government-owned commercial banks limited their services in offering only 'traditional' banking products. Thus, the businesses, households and the government were deprived of modern banking and financial service products (Shrestha M. B., 2005).

2.2.7. Financial Widening

Financial widening is assumed that as entry barriers are removed, new banks and other financial institutions grow in number and size of activity, and thus the financial sector gets widened. As a consequence, the financial services become easily available to a larger population. Financial widening' refers to the increasing use of money in exchanging goods and services. It is assumed that the volume of bank transactions can reflect the degree of financial sector widening. Main indicators of financial sector widening include extended banking services, positive real deposit rate, increased credit availability, and increased inflow of foreign capital. When the banking services get extended to a larger population, it is natural to see an increased volume of bank transactions reflected in bank deposits and credits. When there is a real positive deposit interest rate, it is expected that the savings will increase, which is also reflected in the bank deposits. Credit is one of the main components of bank transactions. Hence, increased credit availability is, obviously, reflected in the total volume of bank transactions. Similarly, since foreign capital inflow normally comes through the banking channel, it is also captured in the total volume of bank transaction. The state-owned commercial banks extended their branches in remote areas of the country, this was not sufficient. Not all the banking service needs of the businesses and the households were catered to by the existing banks, since they were directed to provide the banking services to the specified sectors and for the specified purposes only (Shrestha M. B., 2005)..

2.2.8. Financial Liberalization

Narrowly defined, financial liberalization means elimination of directed credits and high reserve requirements, letting interest rates be determined by the market forces rather than by regulation. In a broader sense, however, it includes a wide set of extra measures such as the easing of portfolio restrictions on banks, changes in the ownership of banks, enhanced competition among banks, integration of domestic entities to international markets and changes in the monetary policy environment. Of these, external sector reforms go hand in hand with financial sector reforms because removing restrictions on exchange and payment systems and establishing a freely functioning foreign exchange market are central to removing distortions

that limit portfolio behavior. Reforms of this type involve two phases: removal of all restrictions on current payments and transfers, and capital account liberalization; the latter by enhancing country's integration with the rest of the world, imposes perhaps the strictest limits on financial repression (Tigabu, 2009).

The reform of the institutional context of the monetary policy implementation principally reckon with increased independence for the central bank and a switch from direct instruments of monetary control like interest rate controls, bank by bank credit ceilings, statutory liquidity ratios, direct credits, bank by bank rediscount quotas to indirect instruments such as reserve requirements, rediscount and Lombard window, public sector deposits, credit auctions, primary and secondary market sale of bills, foreign exchange swaps and outright sales and purchases. The main idea here is for central banks to stimulate the growth of money markets and instruments with a view to enhancing market orientedness of its policy environment. In general terms, this would imply for the central bank to cease direct control over bank behavior in its conduct of monetary policy (e.g. credit controls with a view to controlling the path of broad monetary aggregate) and move toward indirect means such as controlling aggregates from its balance sheet through market oriented instruments mainly open market operations. This substantially alters monetary policy implementation i.e. the behavior of money demand, money supply processes, and the link between the targets and instruments. While these changes create problems for a policy maker in policy management, the real difficulty is posed by the ongoing uncertainties in macroeconomic environment (Ucer: 1997).

2.3. The Impact of Financial Development on Economic Growth

According to (McKinnon 1973) liberalization of financial markets allows financial deepening which reflects an increasing use of financial intermediation by savers and investors and the monetization of the economy, and allows efficient flow of resources among people and institutions over time. This encourages savings and reduces constraint on capital accumulation and improves allocate efficiency of investment by transferring capital from less productive to more productive sectors.

The efficiency as well as the level of investment is thus expected to rise with the financial development that liberalization promotes. These benefits include a decrease in firms in self-investment at low and even negative rates of return, allocation of credit by capital markets rather than by public authorities and commercial banks, a shift away from capital-intensive investments due to the higher cost of capital reflecting its scarcity, the lengthening of financial

maturities, and the elimination of fragmented and inefficient curb markets (Balassa, 1993). Development of the financial system facilitates portfolio diversification for savers reducing risk, and offers more choices to investors increasing returns. Another important function of financial system is to collect and process information on (productivity-enhancing) investment projects in a cost effective manner, which reduces cost of investment for individual investors (King & Levine, 1993). The productive capacity of the economy is determined by the quality as well as by the quantity of investment and capacity utilization is as important as the installed capacity. Easing credit constraint, particularly working capital, is expected to improve the efficiency of resource allocation and thereby reduce the gap between actual and potential output.

This new model is not clear about what institutional forms should in fact replace the previous system, which was clearly inefficient but did directly support strategic investment and growth objectives. In fact, financial systems serve five broad functions. First, they produce information ex ante about possible investments. Second, they mobilize and pool savings and allocate capital. Third, they monitor investments and exert corporate governance after providing finance. Fourth, they facilitate the trading, diversification and management of risk. Fifth, they ease the exchange of goods and services. While all financial systems provide these financial functions, and each of these functions can be expected to have an impact on economic growth, there are large differences in how well they are provided. There are three basic characteristics of financial systems that are now regarded as capturing the impact of these five functions on economic growth: (i) the level of financial intermediation; (ii) the efficiency of financial intermediation; and (iii) the composition of financial intermediation.

First, the level of financial intermediation: the size of a financial system relative to an economy is important for each of the functions listed above. A larger financial system allows the exploitation of economies of scale, as there are significant fixed costs in the operation of financial intermediaries. As more individuals join financial intermediaries, the latter can produce better information with positive implications (an externalities) for growth, a channel emphasized in some of the earlier theoretical models of the finance-growth literature (e.g. Greenwood & Jovanovic, 1990; Bencivenga & Smith 1991). A larger financial system can also ease credit constraints: the greater the ability of firms to borrow, the more likely that profitable investment opportunities will not be by-passed because of credit rationing.

A large financial system should also be more effective at allocating capital and monitoring the use of funds as there are significant economies of scale in this function. Greater availability of

financing can also increase the resilience of the economy to external shocks, helping to smooth consumption and investment patterns. More generally, a financial system plays an important function in transforming and reallocating risk in an economy. Besides cross-sectional risk diversification, a larger financial system may improve inter temporal risk sharing (Allen & Gale, 1997). By expanding a financial system to more individuals there will be a better allocation of risks, which can in turn boost investment activity in both physical and human capital, leading to higher growth rates.

Second, the efficiency of financial intermediation: the channels linking the size of the financial system and growth effectively assume a high quality of financial intermediation. The efficiency of financial systems, however, cannot be taken for granted, especially as information gathering is one of their key functions. Asymmetric information, externalities in financial markets (Stiglitz & Weiss, 1992) and imperfect competition (for example, as a result of fixed costs) can lead to sub-optimal levels of financing and investment, an inefficient allocation of capital, or have other undesirable consequences such as bank runs, fraud or illiquidity which are detrimental for economic growth. Some of these market imperfections may be best addressed through appropriate oversight by a public body but the legal and institutional background (including competition policy) may also foster the efficiency of financial markets and hence contribute to economic growth.

Third, the composition of financial intermediation: two important shifts in the composition of financial intermediation relate to the maturity of financing available and the growth of capital markets and institutional investors such as pension funds and insurance companies. The maturity of loans and bonds may affect the extent to which certain investments may be profitably exploited. On the other hand, the replacement of banks by markets appears to be a result of changes in the cost of intermediation. As noted by (Jacklin 1987), there is no specific advantage to banks. If liquid equity markets exist, all agents will save through equities as they offer higher long-term returns. Indeed, the earliest corporate finance models even suggested the irrelevance of the choice of financing for company's investment decisions (Modigliani and Miller, 1958).

2.4. Financial Development and Economic Growth

Numerous empirical studies at the cross-country level, at a country level, at industrial level and at a firm level have been conducted to examine the link between financial development and growth. There is generally a positive correlation between growth and financial development.

The findings are less clear-cut for stock markets than for banks. With this in mind, one of the controversies between economists is over how to best measure financial development and over the direction of causality between growth and financial development (Eschenback 2004; Abdurrohman 2003). Economists have employed various proxies to address this practicability problem. Results from earlier studies of financial development and economic growth fall into four broad categories:

- 1) The unidirectional causality running from financial development to economic growth;
- 2) The unidirectional causality running from economic growth to financial development;
- 3) The bidirectional causality between financial development and economic growth; and
- 4) No causality between financial development and economic growth i.e. neutral hypothesis.

2.4.1. Supply Leading Hypothesis view

A series of studies have been devoted to analyze the direction of causality between financial development and economic growth. Most contemporary studies put forward the idea that financial development has a strong causal influence on growth (Gupta 1984; King and Levine 1993a; Blommestein and Spencer 1996; Levine 1997; Rajan and Zingales 1998; Levine 1999; Beck, Levine et al. 2000; Xu 2000; Carlin and Mayer 2003; Fase and Abma 2003). This view suggests that the direction of causality runs from the financial to real development

Gupta,(1984) attempted to empirically examine whether financial development was the consequence of or the cause of economic growth. He conducted causality test for 14 developing countries using the data from the 1961-1980 period, and employing five different variables as proxies for financial development and industrial production as a proxy for real economic growth. He found that economic growth was the result of financial development. He also reports some evidence of causality from real to financial variables, with even lesser evidence for two-way (simultaneous) causality. This finding mainly suggests that the direction of causality ran from financial development to economic growth.

King and Levine,(1993a) conducted an empirical study using data on 80 countries over the 1960-1989 periods. They employed four indicators of financial development: overall size of the formal financial system; bank deposits; credit allocated to the private enterprises; and, claims on the non-financial private sector. They found that higher levels of financial development are positively associated with faster rates of economic growth, physical capital accumulation, and

economic efficiency improvements.

Beck,(2000), employs data for 63 countries over the period 1960-1995 to examine the relation between financial intermediary development and sources of growth. They use private credit and liquid liabilities as measures of financial intermediary development. They find that there is a robust, positive link between financial intermediary development and both real per capita GDP growth and total factor productivity growth.

Xu,(2000) examines the effects of permanent financial development on domestic investment and output in 41 countries for the sample period of 1963-1993. He includes real GDP, real domestic investment, and an index of financial development in his multivariate Vector Auto-Regressive (VAR) framework. The result rejects the hypothesis that financial development simply follows economic growth and has very little effect on it. Instead, there is strong evidence that financial development is important to growth.

Carlin and Mayer,(2003) examine the interrelation between the structure of a country's financial systems and industrial growth. They use the data from the OECD countries over the period 1970 to 1995, and employ the investment of 27 industries as the proxy for industrial growth. They report a strong relation between the structure of countries' financial systems and growth of industries in these countries. They found a particularly strong relation between the structures of countries' financial systems and the growth of industries that are dependent on external equity and skilled labor.

Fase and Abma(2003) conduct the empirical study for nine emerging economies in Asia for a sample period of 25 years (1974-1999). They use balance sheet totals of the banking sector as the measure of financial development. They report that financial development matters for economic growth and that causality runs from the level of financial intermediation and sophistication to growth.

McKinnon and Shaw (1973), for example, used real interest rate as a measure of the level of financial development. Both claim that a low real interest rate below a competitive level is an index for financial sector repression responsible for economic downturn (Fry, 1993). They used a relatively high positive real interest rate to represent a relatively developed financial system and argued that it was a significant positive regressor of economic growth by raising saving, financial intermediation and hence the supply of credit for productive use (Abdurohman, 2003). However, the contribution of high real interest rate on the broader spectrum of empirical studies remains an ambiguous one.

As early as 1911, Joseph Schumpeter claim that the services provided by financial intermediaries form an element of economic development through channeling the society's funds to the most innovative entrepreneurs (Schumpeter 1934, Hicks 1969) argues that financial development played crucial role in igniting industrialization in England. The industrial revolution required funds for long-term capital investment. Emergence of financial markets that traded a variety of securities encouraged savers to hold such assets, and these availed liquid funds for long-term investment. "The industrial revolution may not have occurred without this liquidity transformation (Levine 1997, p.692)." These arguments highlight the role of the financial system in economic development.

Fritz,(1984) used the Philippines to examine the causality using data covering 1969-1981. His findings are in support of Patrick that in the initial stage of the development process, causality runs from finance to growth (supply leading hypothesis), while in later (affluent) stage of development.

The pioneering study by (King and Levine 1993) and subsequent work by (Levine and Zervos 1998, Levine 2000, Levine 2000, and Beck and Levine 2001) have proved new evidence in an attempt to resolve this debate. They identify three indicators of financial sector development that are best at explaining differences in economic growth between countries over long periods: bank credit to the private sector, stock market activity (proxied by the turnover rate or the ratio of traded value to GDP), and features of the legal system such as the extent of shareholder and creditor protection. (Levine 2000) further shows that the impact of financial development on growth acts mainly through total factor productivity rather than through capital accumulation or savings rates. He concludes, therefore, that may be Schumpeter was right'.

Growth in Gross Domestic Product (GDP) per capita is the most commonly used measure of economic growth. Yet, (Levine 1997) use three different indicators for growth: 1) the average rate of real per capita GDP growth; 2) the average rate of growth in the capital stock per person and 3) total productivity growth. However, he finds GDP per capita growth to be the most useful for investigating economic growth. The measures for financial development differ more from study to study. Levine introduces four main indicators of financial development. These variables are liquid liabilities, claims on the non-financial sector, claims on the private sector and deposit bank domestic credit compared to central bank domestic credit. These are supposed to represent the size and the activity of the financial sector. Levine also runs regressions including other explanatory variables like log of initial income, school enrolment rate, inflation, and ratio of exports and imports to GDP. Levine's findings indicate a substantial role for the

financial sector in economic growth. His major contribution is the framework of the functions through which financial development can be channeled into economic growth. He states that evidence indirectly suggests that countries with financial institutions which are effective at relieving information barriers will promote faster economic growth through more investment than countries with less effective financial systems.

Atif, Jadoon, Zaman, Ismal and Seemad (2010) examine the impact of financial development and trade openness on GDP growth in Pakistan using annual data over the period 1980–2009. The study used the ARDL bound test by (Pasaran, 2001). It found evidence of long-run relationship among the variables financial development, trade openness and economic growth. The study also found that FD and trade openness to Granger cause economic growth over the period of study.

Chistopoulos and Tsionas, (2004), using panel data, of 10 developing countries, examined the relationship between financial development and economic growth. Their study used the ratio of bank deposit liabilities to nominal GDP as a measure of financial debt; it also included inflation rate and the ratio of investment to GDP as control variables. The results provided evidence of long-run unidirectional causality running from financial development to economic growth. However, the study did not find direction of causality between financial development and economic growth in the short-run.

2.4.2. Demand Following Hypothesis view

Some prominent economists view finance as a relatively unimportant factor in economic development. (Robinson 1952) claim the financial development primarily follows economic growth. She asserts: “by and large, it seems to be the case that where enterprise leads finance follows (p.20).” Similarly, (Lucas, 1988) state, “the importance of financial matters is very badly over-stressed.” His model of economic growth encompasses physical capital, human capital and technological change as the only factors affecting economic growth.

The pioneering empirical work by (Goldsmith 1969) was successful in documenting the positive relationship between financial development and economic growth. Goldsmith used annual data for a period from 1880 to 1963 from 35 countries and employed a financial interrelations ratio to relate the process of financial development to modern economic growth. He asserts that financial superstructure accelerates economic growth and improves economic performance by facilitating the migration of funds to the place in the economic system where the funds will yield the highest social return.

Odekun (1996) studies 71 developing countries to identify the direction of causation using data over 1960s and 1980s. His findings strongly support the supply-leading hypothesis. He provided the following conclusions: first, financial intermediation promotes economic growth in roughly 85% of the countries; second, financial intermediation plays an equally important role in enhancing growth as other factors like export expansion, capital formation ratio and is more important than the labor growth in this context; third, financial intermediation promotes growth primarily in low income LDCs; and more importantly, he finds that growth-promoting patterns of financial intermediation are practically invariant across various countries and regions.

Odhihambo, (2008), using time series of the period 1968–2002 and a dynamic causality model investigated causality between financial development and economic growth in Kenya. The study used broad money (M2), currency ratio (CC/M1) and credit to private sector as proxies of financial development. The results suggested that causality between financial development and economic growth depends on the proxy used for financial development in Kenya, and that causality on the balance runs from economic growth to financial development. This study supports the demand-following hypothesis on average.

Muhammad and Muhammad,(2010) investigated the direction of causality between financial development and economic growth, and co-integration among the two variables in Pakistan. The results of the study proved the existence of demand following hypothesis Pakistan, implying that economic growth granger causes financial development when broad money (M2) is used as a proxy variable for financial development. The study also found a long-run relationship between financial development and economic growth.

2.4.3. Bi-directional Causality view

Similarly, some studies have also claimed that there exists a bi-directional relationship between financial development and economic growth (Greenwood and Jovanovic 1990; Luintel and Khan 1999).

Greenwood and Jovanovic,(1990) found growth and financial structure to be inextricably linked. They claim that growth provides the means to develop financial structure, while financial structure in turn allows for higher growth since investment can be more efficiently undertaken (Greenwood and Jovanovic 1990, Luintel and Khan 1999) empirically examine the long-run causality between financial development and economic growth in a multivariate time series framework using data from 10 sample countries. Their finding supports the bi-directional

causality between financial development and economic growth in all the countries analyzed (Luintel and Khan 1999).

Patrick, (1966) propose a useful framework for the study of the causal relationships between finance and growth. He highlights the distinction between the ‘supply-leading approach’ and the ‘demand-following approach’ in financial development. According to his views, ‘demand-following’ financial development appears as a consequence of the development of the real sector, whereas ‘supply leading’ financial development precedes demand for financial services, and can have an autonomously positive impact on growth. This hypothesis suggests the two-way causality that may exist between financial development and economic growth (Patrick 1966).

Songul, Ilhan, and Ali (2009) investigated the causality between financial development and economic growth in Sub-Saharan Africa for the period 1975–2005. The study used panel co integration and panel GMM for causality analysis. The results from panel cointegration suggested that there is no long-run relationship between financial development and economic growth. Results on causality analysis indicated existence of bi-directional causality between financial development (credit to the private sector was used as proxy for financial development) and real GDP per capita. The study therefore, supports both the supply leading and demand following hypothesis

Rachdi and Mbarek, (2011), using panel data co-integration and GMM system approach investigated the direction of relationship between finance and economic growth for 10 countries (6 for OECD and 4 for MENA (Middle East and North Africa countries)). Their empirical results showed that there is cointegration between financial development and economic growth for OECD and MENA countries. In addition, the GMM system results confirmed that financial development and real GDP per capita are positively and strongly correlated. Lastly, the study also found that causality is bi-directional in OECD countries while for MENA countries are unidirectional, with economic growth causing financial development.

Akinlo and Egbetunde, (2010) investigated cointegration and the direction of causality between financial development and economic growth of ten sub-Saharan African countries. The study found that there is long-run relationship between financial development and economic growth in the countries selected. The results also showed that financial development granger causes economic growth in some countries while in others there was bi-directional causality between the two variables.

2.4.4. No Causality view

Contrary to the above assertions, some studies do not find any strong causal relationship between financial development and economic growth (Demetriades and Hussein 1996; Ram 1999).

Demetriades and Hussein, (1996) studied 16 less developed countries using time series data. Their findings provided little support for the finance-leads-to-growth hypothesis; rather there was more evidence for the opposite direction and for bi-directional causality. For instance, Korea and Thailand the two countries with successful financial reform provided bi-directional causation. They concluded that causality patterns varied across countries and stressed the need for case studies and careful time-series analysis. Similarly, Ram, (1999) argues that the preponderance of empirical evidence does not encourage one to share the view that financial development is observed to have a positive effect on economic growth Ram (1999).

Thus, it is clear from the literature review, regarding the relationship between financial development and economic growth, that studies produce mixed results. Most of the studies have found existence of long-run relationship between financial development and economic growth. The empirical results on the direction of causality are more mixed as compared to co-integration analysis. Some findings indicate that there is unidirectional causality running from financial development to economic growth, hence supporting supply leading hypothesis. Another variation in the results of causality is the finding of unidirectional causality running from economic growth to financial development; this supports the demand following hypothesis. And also some studies argue financial development and economic growth have bidirectional causality and few studies have no causality between the two.

2.5. Overview of Ethiopian Economy

The Ethiopian economic growth has shown peculiar changes in different political regimes. The regime change created inconsistency in implementing Policies of the previous regime. Internal and external war as well as the natural disaster cause unbearable Drought and famine.

In modern Ethiopian political economic history, we can distinguish three regimes that followed unique macroeconomic policies with its impact on macroeconomic growth performance of the country. These are the period of pre 1974 (the monarchy regime), the period 1974-1991 (the military regime) and 1992 to the present (the EPRDF regime). Ethiopia's economic policy history is characterized by several radical policy changes and blows. During the monarchy (pre

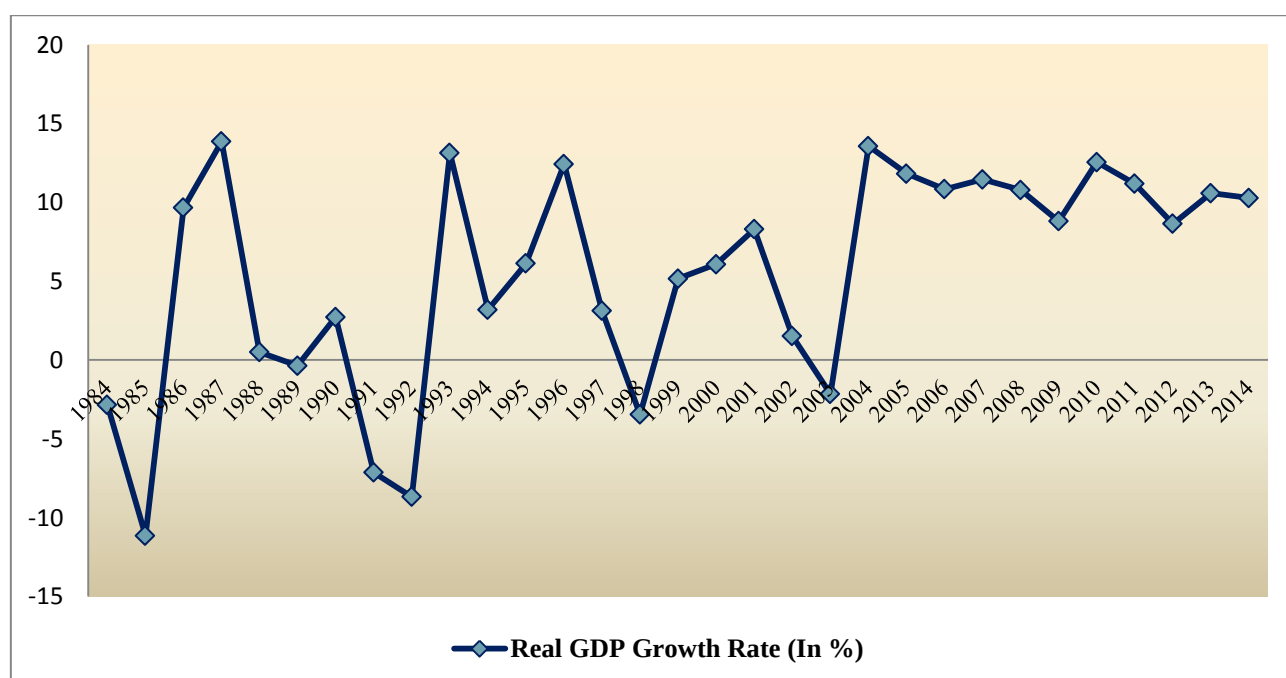
1974) economic policy was mainly known to be a market-oriented economic system. However, the period 1974–1991 characterized by centralized and command economic system. Since 1992 EPRDF officially denounced the socialist system and supported market-oriented economic system.

The Ethiopian economies has an impressive performance over the last decade with an average GDP growth of 11% which is twice the average growth of the Sub Saharan African countries and triple the world average growth over this period and has led to Ethiopia being rated as one of the fastest growing economies in the world. (UNDP, 2014).

According to the (CSA) census 80% of the population are located in rural areas and are primarily engaged in subsistence agriculture despite the emphasis and effort of the Government of Ethiopia to transform the agricultural sector from subsistence to the business oriented one it still depends upon the vagaries of nature.

The agricultural sector accounts for roughly 41 per cent of GDP and 90 percent of exports. Whenever major natural disaster strikes such as famine of 1984 in Wollo, Green famine of 1994, the millennium famine 2002, impact of the drought lives a mark on the economy as shown in (Figure 2)

Figure 2 *Growth rate of Real GDP*

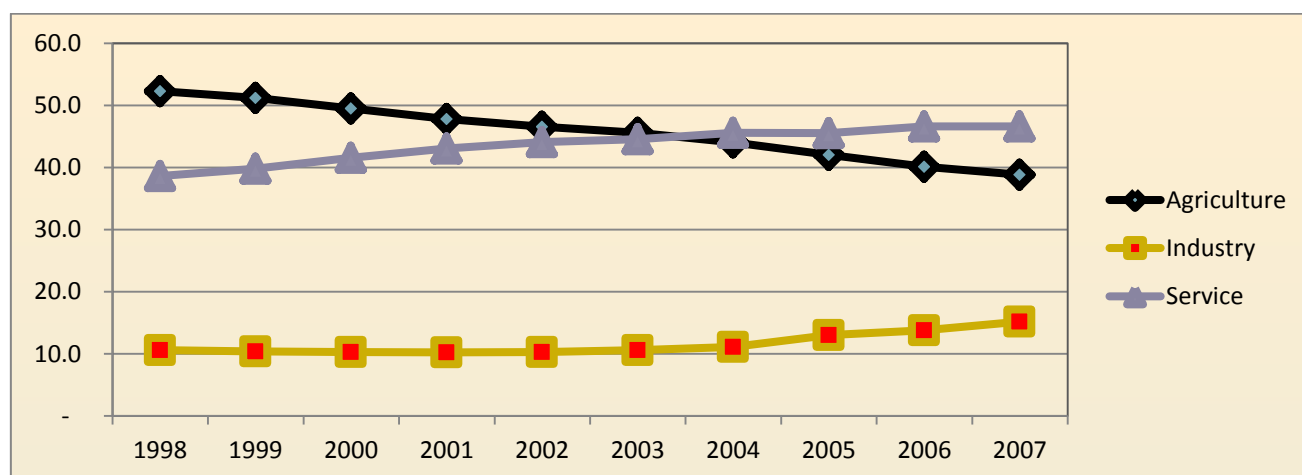


Source: World Bank Database

The structure of GDP comprises Agriculture, Industry and service sector in 2014/15(EFY).The

agricultural sector has been the backbone of the economy and accounted for 45 percent of the GDP but since the past few years the service industry which mainly include the construction sector has slowly surging the industry sector has remained the lowest among the sectors for decades (Figure 3)

Figure 3 Sectorial Contributions to GDP



Source: Economic survey of MOFEC

Huge public investments with focus on infrastructure and pro-poor sectors explain much of the economic performance from the expenditure side. Government investments have mainly been carried out from domestic resource mobilization and augmented by external resource inflows. Domestic savings has been growing significantly in the past few years from 12.8% of GDP in 2010/11 to 17.7% of GDP in 2013/14. (UNDP, 2014)

The newly introduced savings instruments (bonds) and expansion in financial services through the aggressive opening of banking branch networks have contributed to the surge in the domestic savings and also recently the saving house has boosted the saving further.

The Human Development Index i.e. composite index of life expectancy, education and income shows Ethiopia performing better than many low-income countries. Income distribution, as indicated by the Gini coefficient¹ (.336), is relatively less skewed than other low-income countries. Ethiopia also scores better than the median African country on governance attributes especially social welfare, education and health (IMF, 2014)

2.5.1. Macroeconomic Policy

2.5.1.1. Fiscal Policy

Fiscal policy has focused on strengthening domestic-resource mobilization (particularly tax collection) and reducing recourse to central bank lending while, at the same time, increasing pro-poor spending including investment in physical infrastructure.

Domestic revenue collection has been improving in the past several years owing to vigorous tax reform measures, improved tax administration and trade-facilitation efforts. During 2013/14, tax revenue increased by 24.8% and as a ratio of GDP, it increased by 0.6 percentage point from 9.7% in 2012/13 to 10.3%. Improved domestic revenue collection enabled the government to finance 81% of its expenditure from domestic sources.

Total government expenditure, as a ratio of GDP, decreased from 16.8% of GDP in 2012/13 to 16.1% in 2013/14. The share of pro-poor spending in total expenditure has been rising steadily reaching 73% in 2013/14 from 70% in 2012/13. Aggregate expenditure is expected to increase in 2014/15 and 2015/16, with capital spending growing faster than recurrent expenditure to support the implementation of the GTP (Growth and Transformation plan) and achieving a middle-income economy by 2025.

2.5.1.2. Monetary Policy

The primary objective of the monetary policy of the National Bank of Ethiopia is to maintain price and exchange rate stability and support sustainable economic growth of Ethiopia.

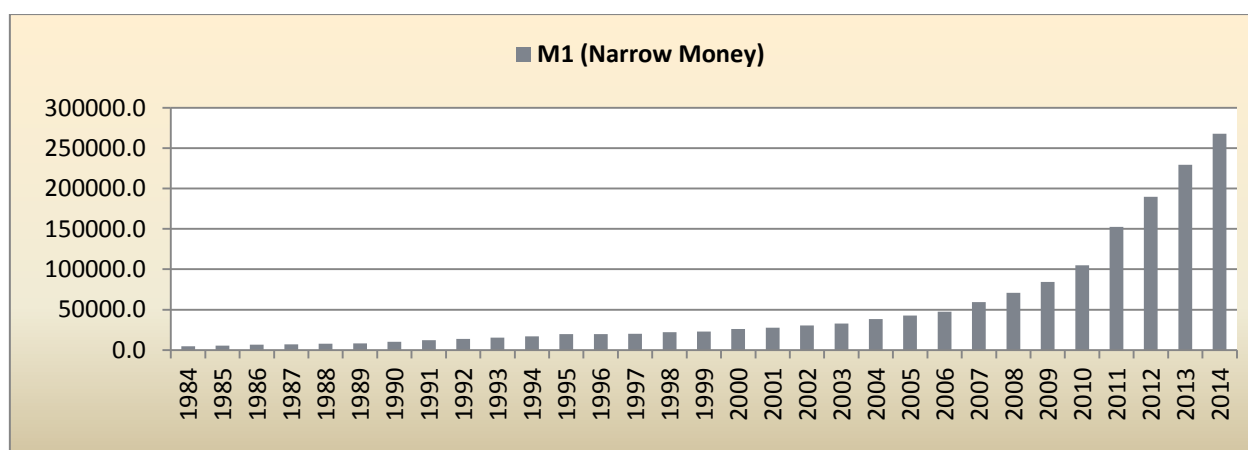
More specifically, the objectives of Ethiopia's monetary policy include:

- Fostering monetary, credit and financial conditions conducive to orderly, balanced and sustained economic growth and development.
- Preserve the purchasing power of the national currency – ensuring that the level of money supply is generally consistent with developments in the macro- economy and intervening in the foreign exchange rate market for the purpose of stabilizing the rate when conditions necessitate.
- Encourage the mobilization of domestic and foreign savings and their efficient allocation for productive economic activities through the implementation of a prudent market driven interest rate policy and;

- Facilitate the emergence of financial and capital markets that are capable of responding to the needs of the economy through appropriate policy measures. These measures would ensure the gradual introduction of trading instruments on a short-term basis.

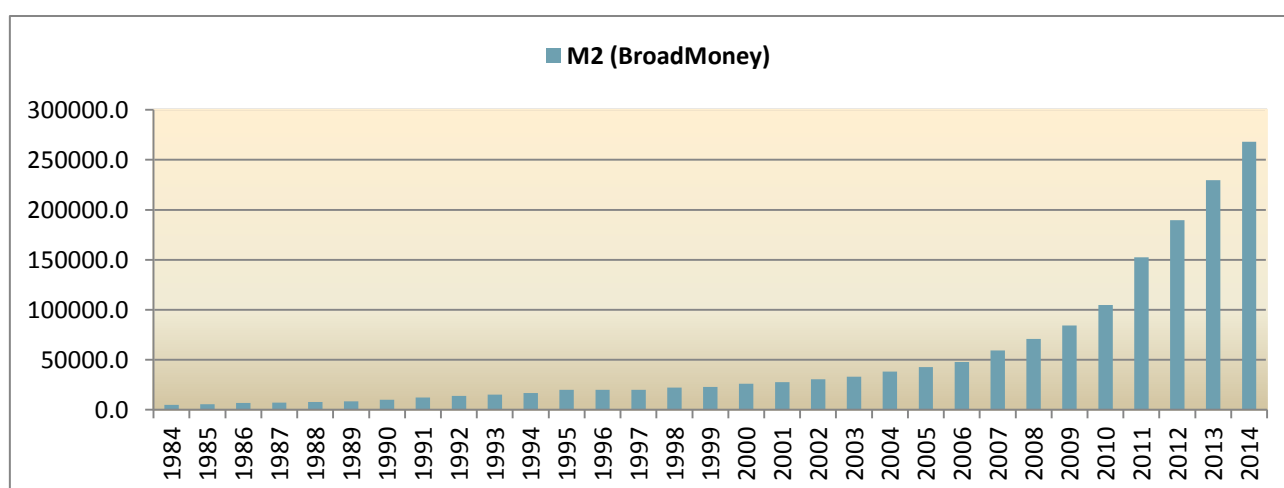
The narrow money (M1) increased by 14 per cent in 2014 from the previous year and reached to 134 trillion birr, whereas broad money (M2) increased by 21 per cent in this period and reached 297 trillion birr (Figure 4 and 5). The growth rate of M2 has been higher than that of M1. The average annual growth rate of M1 stood at 15 per cent during 1984-2014, while that of M2 stood at 11 percent during the same period.

Figure 4 *Monitory expansions('000)*



Source: Author's computation of NBE data

Figure 5 *Monitory Growth('000)*



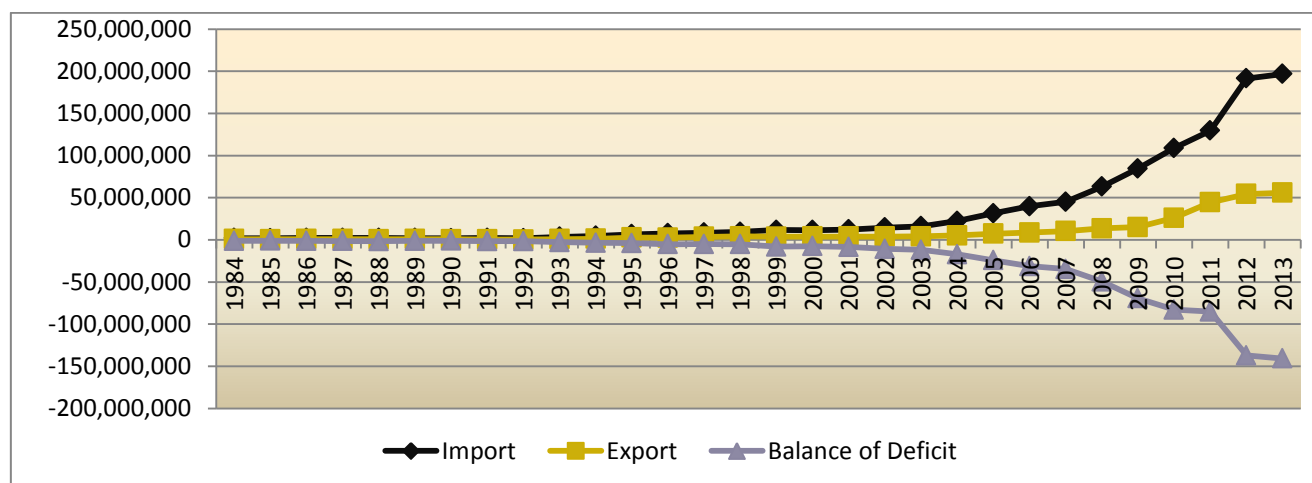
Source Author's computation of NBE Data

2.5.1.3. Import and Export

Ethiopia's external sector which affects the macro economic variables i.e. (import and export)

is shows the policy measure of the government. Most of the modern day Ethiopian foreign trade has experienced trade deficit most of the times in the past. This deficit phenomenon can be basically explained by the unequal terms of trade between the country's major export agricultural commodities which accounts for 90 percent and the country's major import capital goods (Ashebir, Yirtaw, & Godana, 2015). In Addition to that, currency overvaluation during military regime which pegged to 2.07 per USD also could be considered as a factor. Thus, to overcome the deficit, in the late 1992 EPRDF had devalued the exchange rate to Birr 5 per USD which was intended to boost exports and discourage imports.

Figure 6 Trends of Import, Export and Trade balance ('000)



Source: Authors Computation of NBE data

As shown in the above Figure 6, before (1992) the growth rate of exports was negative i.e. in declining trend. The reasons associated with the declining performance of export is the overvalued exchange rate which induced low export earning this is evident on Figure 6, after the devaluation of Birr in 1992 by 141 percent against USD the earning from the export start to steadily increase.

Kassie, (2015) point out the high commodity and geographic concentration characterize the Ethiopian export that depends on agricultural output, though relatively inelastic as compared to industrial exports it is highly vulnerable to external shock. On the other hand, imports of the country is composed of inputs other than consumer goods are higher, that is the import of capital, raw materials, semi-finished goods and fuel together takes highest share among imported goods intrinsically are highly price inelastic which are either necessities in production or consumption or very strategic commodity is highly inelastic, and then relatively more

expensive imports due to devaluation will only minimally affect are invariably required by the country. The devaluation has two way impacts favoring the export and rising price of import results in worsening of the trade deficit.

2.5.1.4. Financial Sector

The financial sector, mainly banking and insurance services have been broadly stable and growing in terms of expanding its services. As of 2014/15 Ethiopia have 19 commercial banks and 17 insurance companies.

The sector continues to tap into new opportunities for mobilizing savings through establishment of new banks and expanding their branch networks as well as introducing new financial instruments.

The banking system accounts for about 80% of total assets of the financial sector, and is dominated by state-owned banks, mainly the Commercial Bank of Ethiopia (CBE). In 2013/2014, public banks account for 51.1% of bank branches (1724), 54.6% of total capital, 68.4% of total deposits and 63.5% of outstanding bank loans, although their dominance is declining with the entry of more private banks, as well as expansion of the existing ones. The recent directive requiring private commercial banks to invest 27% of their gross loan disbursements in National Bank of Ethiopia bonds is likely to further make the playing field between private and public banks more uneven. However, the recent directive requiring private commercial banks to invest 27% of their loan disbursements in 5-year National Bank of Ethiopia (NBE) bonds at an annual interest rate of 3%, while the minimum deposit rate is 5%, would put private banks in uneven ground to compete with the public banks.

The financial sector is considered shallow because it is characterized by limited range of services, limited foreign participation in the banking sector and the non-existence of capital markets. According to the Global Competitiveness Report 2013/2014, Ethiopia is ranked 126th out of 148 countries in financial market development, lower than the average of “factor driven economies”.

Banking coverage stands at about 50,200 people per commercial bank branch, concentrated mainly in urban areas, making Ethiopia one of the most under-banked countries in sub-Saharan Africa. By June 2013, the private credit to GDP ratio was around 15.9% compared to the average of 30 % for sub-Saharan Africa. Lending is mainly collateral-based, to the detriment of the vast majority of small entrepreneurs. Credit to the private sector, which is already low, will

be held back as banks allocate funds towards NBE bills, following the new directives. Private Banks' lending interest rates could also rise to compensate for the loss, unless the banks fully absorb the costs of the new policy. In the World Bank report doing Business 2014, Ethiopia ranks 109th in getting credit out of 189 countries.

On the money market, the government offers 28-day, three-month and six-month maturity treasury bills. It prohibits the interest rate from exceeding the bank deposit rate. With the yields

On these T-bills set below 3%, this market remains unattractive to the private sector and, thus, over 95% of T-bills are held by the state-owned CBE and public enterprises.

The government has made some efforts to improve the settlement system. Recently, the NBE launched a technology platform for Real Time Gross Settlements for large value payments and a centralized Automated Clearing House. A modern Credit Bureau has been setup and the Credit Information Centre has been fully automated and upgraded. The commercial banks have rolled out core banking solutions (CBS) across branches. The banks have already started seeing the benefits of the system, including real-time transfer of funds among all branches (on-line local transfer services); increased utilization of ATMs by the customers of all online branches; and efficiency of service delivery and ease of access of banking services for online branches.

During the pre-reform period of 1974-91, since private participation was not allowed, the state-owned commercial banks and the state-owned insurance company covered 100% of the branch network and capital with the CBE takes the lion's share. During the post reform period, the number and share of private banks and insurance companies, in line with gradualism property of the reform process in the market, has been increasing.

2.6. Conceptual Framework

The conceptual frame work in Figure 7 indicate economic growth is dependent on the financial development represented by financial deepening is represented by broad money and private sector credit while financial widening indicated by trade openness. The economic growth is expected to be enhanced when the financial system is liberalized. Hence, the financial reform is expected to catalyze the economic growth this relationship is captured with the use of financial liberalization as a dummy variable indicating the effect of the reform.

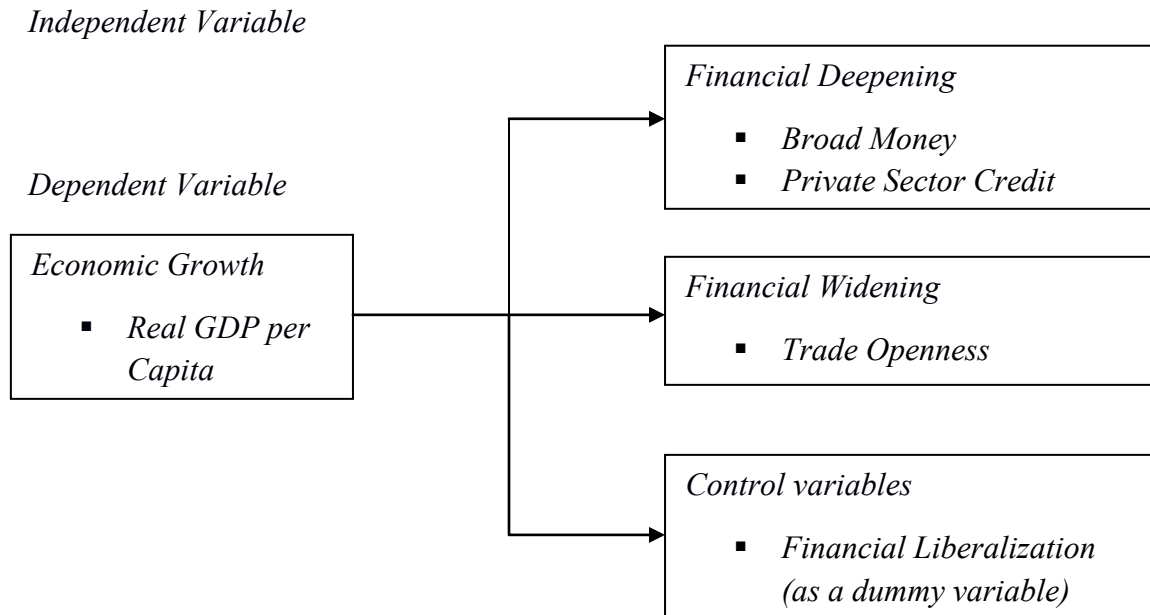


Figure 7: Self constructed conceptual Framework

2.7. Summary and Concluding Remarks

In this chapter, I have reviewed literature on financial development and economic growth and its impact on the economy. I have found that economists differ in their viewpoints regarding the role of finance in economic growth. Four different views are found in the literature concerning the potential role of finance on economic growth. The first view considers financial development leads to economic growth. The second view regards economic growth leads to financial development. The third view financial development and economic growth has bidirectional causality or feedback from each other. And, the fourth view financial development and economic growth has independence from each other or no causality.

A series of studies have been devoted to analyze the direction of causality between financial development and economic growth. Most contemporary studies suggest that the direction of causality runs from the financial to real development. These studies have shown that increased savings, efficient investment, active stock market activities, quality bank services, transaction ease, and suitable financial structure are the possible channels through which financial development can influence economic growth. Similarly, some studies have also claimed that there exists a bi-directional relationship between financial development and economic growth. Contrary to the assertions, some studies do not

find any significant causal relationship between financial development and economic growth.

Most recent cross sectional empirical studies conducted on developing countries such as Chistopoulos and Tsionas, (2004), Songul, Ilhan, and Ali (2009 and Akinlo and Egbetunde, (2010) unfortunately does not feature Ethiopia as a sample of their study.

In terms of case study according to the researchers knowledge only (Tigabu, 2009) has viewed financial reform and economic growth in the span of 1980-2006 Using multivariate linear regression model the finding indicate significant impact of the financial development after the reform and also concluded the financial development has contributed to economic growth. He further argues evidence that financial liberalization leads to stronger financial sector which is critical to economic growth.

The researcher assessments of literatures suggest, the direction and causality has not been evaluated empirically with this study scope and objectives in Ethiopian context according to the knowledge of the researcher. Hence, the researcher found it motivating as it enable the policy makers a better view of the causality and contribution of financial development and further contribute to the stock of literatures.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

In the preceding chapter, the review of relevant literature helped this study to understand the problem and design an appropriate research approach to deal with. This section deals with research design and justification of the selection of methodology.

3.2. Data and Sources

The study adopts descriptive statistics through the use of time series data from 1980-2014 G.C. the research is designed to realize a stated objective. The study employed quantitative research approach using secondary data gathered from the Ministry of Finance and Economic Cooperation and National bank of Ethiopia annual report and different publications of both NBE and MOFEC for Macroeconomic variables.

3.3. Model Specification

There are several indicators of financial development that have been proposed in the literature. Similarly several studies have used various proxies for financial development. It is clear that from the definition of financial development, there is no single indicator which can measure financial development of a country. This paper uses the variable (ratio of $m2$ to nominal GDP ($m2/GDP$)) and (ratio of the private sector credit to nominal GDP (pc/GDP)) as proxies for financial development. The ratio of broad money supply ($m2$) to nominal GDP broad money/GDP ($M2/Y$); measures financial depth and the size of financial intermediation and shows expansion of payment and savings activities offered by the financial sector.

The proxy pc/GDP is for financial depth; this ratio excludes the public sector and shows how credit is allocated more efficiently since the private sector utilizes funds more efficiently as compared to the public sector. The level of credit supplied to the private sector, indicates the working of the savings investment channel done by the financial sector. Thus, an increase of this ratio shows how the financial sector allocates the savings received by the financial intermediaries to the private sector. A high ratio means that funds are available to the private sector to finance their investment activities. It is notable that developed financial sector channels funds to high return projects, hence impacting positively on economic growth. Therefore, financial development indicated by increase of credit to the private sector

stimulates private investment in the country which in turn increases economic growth, holding other factors constant (King & Levine, 1993). Lastly, real GDP per capita will be used as a proxy for economic growth.

The study also included trade openness of the economy as a control variable in income determination. It was included to account for the effects of international trade on economic growth of Ethiopia. Trade openness will be measured by the ratio of the sum of the values of exports and imports to nominal GDP over the sample period. Usually, exports have the potential of impacting positively on economic growth if they increase demand for domestically produced goods in the international market, and are able to generate enough foreign exchange to finance capital imports (Allen & Ndikumana, 2000). In addition, imports also stimulate economic growth if they mainly comprise of capital goods which are inputs in the production processes of the country. Notwithstanding, imports can also lead to decline of national income. This usually occurs when imports displace domestic production of goods and services. Total output of the country will drop as well as total employment which negatively affects national income. Thus, the combined effect of exports and imports can either be negative or positive. The exact effect can be determined empirically.

It is worth pointing out that all variables will be transformed to natural logarithms before analysis to avoid the problem of heteroscedasticity of the error terms; the estimated coefficients on level variables are elasticity's. Since all variables will be tested for non-stationary using Unit root test, they will be differenced once and the estimated parameters of first differences of the natural logarithms gave approximate growth rates of the variables.

In addition, this study uses the Autoregressive Distributed Lag (ARDL) bounds testing approach to estimate the short and long-run relationships among the variables. This method was developed by (Pesaran and Pesaran 1997, Pesaran and Shin 1999, Pesaran, 2001). The method has several advantages; as opposed to other multivariate co-integration methods such as (Johansen and Juselius 1990), it allows the co-integration relationship to be estimated by OLS once the lag order of the model is identified. This method is applicable whether the regressors are $I(0)$, $I(1)$ or mutually co-integrated. Therefore, it doesn't require the pretesting of the variables included in the model for unit roots unlike other techniques such as Johansen approach. It is relatively more efficient in small or finite sample data sizes. Additionally, the estimates derived from Johansen-Juselius method of co-integration are not robust when subjected to small sample sizes (Loesse, 2009; Narayan, 2005; Pattichis, 1999; Mah, 2000; Tang & Nair, 2002). Also, a dynamic unrestricted error correction model (UECM) can be

derived from the ARDL bounds testing model through a simple linear reparametrization. Thus, the UECM combines the short-run dynamics with the long-run equilibrium without losing any long-run information.

$$LRGDPPC = \alpha_0 + \alpha_1(M2/Y) + \alpha_2(PC/Y) + \alpha_3((Ep+Im)/Y) + \alpha_4FL + \varepsilon_t, \dots$$

Table 1: Dependent and independent variables

Variable	Theory Intuition	Expected sign in relation to GDP
LRGDPPC	Log of real GDP per capita	Dependent Variable
FD	Financial development generally improves the intermediary effects of financial institutions and this generally leads to increased quality investments that increase economic activity	(+)
M2/GDP	The higher the financial deepening and increased money in the economy should lead to increased economic activity.	(+)
PC/Y	Private sector credit/GDP generally is assumed to represent financial development and effect of financial reform	(+)
CONTROL VARIABLE		
TOP	Openness is generally regarded as positive and as total trade increases economic growth rises $((Ep+Im)/Y)$	(+)
FL	Financial liberalization has a positive effect on economic growth as it allows the market to function efficiently without government and statutory hindrances. FL as a dummy variable in Ethiopian case were fully repressed until 1994 hence the financial reform is accounted by value of 0 before 1994 and 1 after the reform to assess the impact of financial reform.	(+)

3.4. Preliminary tests on variables of the study

Empirical tests conducted in the next chapter before proceeding to the regression it is essential to find out the nature of the variables before adopting them in the model for practical analysis. Hence, this test include test for unit root, autocorrelation, hetroskedasticity and model stability.

3.4.1. Testing for Stationary

As the long-term relationship between various time series and the pattern of effect of one variable on another variables analyzed, cointegration and causality tests between various sets of variables conducted. Before starting the cointegration and causality tests, it is essential to check

each time series for stationarity. If a time series is non-stationary, the regression analysis done in a conventional way produce spurious results. Therefore, in order to examine this property of the time-series, the unit root test is conducted first.

Unit root test being the preliminary step for econometric analysis of time series data, basically in the cointegration tests, the test results are achieved assuming the presence of unit root (non stationary of the variable) in the null hypothesis (H_0) and no unit root (stationary of the variable) in the alternative hypothesis (H_a). In this regard, decisions were made based on the calculated statistic and McKinnon's critical value in comparison with the critical values.

A variable was considered non stationary if its calculated value was less than the Mackinnon's critical value and we justify the existence of a unit root. On the other hand, a variable was considered stationary if its calculated value was higher than the critical value and this confirmed the absence of unit root. These values were generated using the ADF test in E-view 9.

For the lag length of k ; the tests had a maximum lag of 4 and down to the appropriate lag by examining the Akaike Information criterion (AIC). The target was to minimize residuals which is indicated by the minimum AIC.

Using non-stationary variables to perform a regression generates spurious results and in most cases leads to poor forecasts. Differencing the non-stationary variable(s) may makes it stationary by removing the trend due to growth rate (Volgen; 2005). With this in place non-stationarity was corrected by taking the first difference of the series. The target was to achieve the statonarity at the minimum AIC.

3.4.2. Testing for Serial Correlation

Serial correlation is usually a result of model mis-specification or genuine autocorrelation of the model error term. In the presence of such a phenomenon, ordinary least squares are nolonger BLUE (Best Linear Unbiased estimators). In such cases R-squared may be over-estimated. In case we have lagged dependent variable to the right hand side, OLS estimators are biased and inconsistent. There was thus every need to test for serial correlation in the residuals.

H_0 : $\rho=0$, i.e. no serial correlation

H_1 : $\rho=1$ i.e. presence of serial correlation

The rule of thumb is that $DW \approx 2$, i.e. there is no serial correlation

$DW < 2$, implies a positive serial correlation and

$DW > 2$ implies presence of a negative serial correlation.

However DW test becomes invalid if there are lagged dependent variables to the right hand side of the regression and it is also dependant on the distribution of the data matrix in question. This dependence can be handled by placing bounds on the critical region. Being aware of the weaknesses of DW test, reliance will be made to the Correlogram Q-statistics as a confirmatory test to DW test. This test Correlogram Q-statistic displays both the autocorrelation and partial correlation functions of the residuals together with the Ljung-Box Q-statistics for high order serial correlation. In presence of serial correlation, the autocorrelation and partial correlations at all lags will be around zero and all Q-statistics will be significant.

3.4.3. Cointegration Tests

Error correction and cointegration analyses have added much to time series analysis and as such further engraved the economic theory in explaining the relationship between economic variables. The forerunners to the ADRL and cointegration analysis may be separated into two main sections where statisticians and econometricians used time series data in different ways. Firstly, assuming that the non stationarity of time series did not affect empirical analysis the econometricians utilised the classical linear regression model (CRL). The main problems to be dealt with in this regard were simultaneity and autocorrelation while little attention was given to the dynamics of the data such as spurious (nonsense) regressions resulting in flawed interpretation of the R^2 , DW and t statistic (Granger and Newbold, 1974). Secondly, according to Kennedy (1998) time series analysts were inclined to avoid the dilemma of stationarity by differencing data as much as necessary to make it stationary. As the continual differencing is basically a representation of the dependent variables own past values as well as current and past errors therefore it is deemed atheoretical. These problems are adequately dealt with in the cointegration and Autoregressive Distributed Lag Model.

After the unit root test, it was found out that the variables were either $I(0)$ or $I(1)$. The cointegration test under Johansen (1988) maximum likelihood cointegration procedure will be followed to determine whether variables enter into a long run relationship. The existence of cointegration is confirmed if the number of cointegrating vectors is greater than zero. In other words Johansen maximum likelihood shows the number of cointegrating vectors which exists whenever the maximum likelihood ratio value exceeds the critical value for a given number of

vectors. The existence of cointegration implies the existence of a long run relationship. Short-run dynamics captured using the error correction models (ECM).

3.4.4. The Autoregressive Distributed Lag Model (ARDL)

A large number of past studies have used the Johansen cointegration and Engle-Granger causality technique to determine the long-term relationships between variables of interest. Infact, this remains the technique of choice for many researchers who argue that this is the most accurate method to apply for I (1) variables. Recently, however, a series of studies by (Pesaran1999, 2001; Narayan 2004); have introduced an alternative cointegration technique known as the ‘Autoregressive Distributed Lag (ARDL)’ bound test. There are numbers of advantages of using ARDL model also called ‘Bound Testing Approach’ instead of the conventional Engle-Granger two-step procedure (1987), Maximum likelihood methods of cointegration(Johansen, 1988 and Johansen and Juselius1990).

First, the ARDL model is the more statistically significant approach to determine the cointegration relation in small samples as the case in this study (Pesaran, 2001; Narayan,2004), while the Johansen co-integration techniques require large data samples for validity. A second advantage of the ARDL approach is that while other cointegrationtechniques require all of the regressors to be integrated of the same order; the ARDL approach can be applied whether the regressors are purely order zero $I(0)$, purely order one $I(1)$, or mixture of both. This means that the ARDL approach avoids the pre-testing problems associated with standard cointegration, which requires that the variables be already classified into $I(1)$ or $I(0)$ or mixture of both (Pessaran, 2001). Third, with the ARDL approach it is possible that different variables have different optimal numbers of lags, while in Johansen-type models this isnot permitted. Forth, the other advantages of bound testing approach in the long run and short run parameters of the model in questions are determined simultaneously (Nasiru, 2012 as cited in Tsadkin, 2013).

The orders of the lags in the ARDL Model is selected by either the Akaike Information criterion (AIC) or the Schwarz Bayesian criterion (SBC), before the selected model is estimated by ordinary least squares. We use the Akaike Information criterion (AIC) in lagselection because of its advantages for small sample size (Tsadkan, 2013) as it is the case in this study. Determination of the optimal lag length is so crucial in ARDL model, because of it helps us to address the issue of over parameterizations and to save the degree of freedom (Taban, 2010 as cited in Tsadkan2013). For annual data, (Pesaran and Shin 1999) recommend

choosing a maximum of 2 lags. From this, the lag length that minimizes Akaike Information criterion (AIC) is selected.

3.4.5. Error correction models (ECM)

These models were used to measure the short-run effects of financial liberalization on Variables. The error correction modeling philosophy by Granger (1986) was used to produce short run forecasts and provide the short run dynamics necessary to obtain the long-run equilibrium.

3.4.6. Granger Causality Test

The dynamic relationship is the simplest technique to use to examine the cause and effect relationship between variables and it is applied in the context of the simple linear regression model. However, the simple linear regression model fails to capture the underlying dynamic causality between variables which is efficiently analyzed by Granger (1969) in terms of the Granger causality tests. Before using the multivariate Granger causality test one has to ensure that all the variables are stationary in levels. If there is no cointegrating vector, multivariate Granger causality tests are executed through first differencing the variables of the vector auto regression (VAR) model. If the variables are cointegrated Granger causality tests can be done through the use of the vector error correction (VEC) model. This is supported by Engle and Granger (1987) who argue that if two time series are cointegrated then they are necessarily causally related. It is therefore important to test for stationarity properties of variables before operationalizing the Granger causality tests. Later, Sims (1972) contended that Granger causality in a bivariate system is primarily due to an omitted variable, which may cause either one or both variables in the univariate system.

Finally, Applying the ARDL technique we can obtain unbiased and efficient estimators of the model (Narayan, 2004, Harris and Sollis, 2003; Pesaran, 1995 as cited in Tsadkin 2013).

Hence it is worth noting that Eview 9 selects the model automatically based on the minimum alue of Akaike Information Criterion (AIC) or Schwarz Bayesian criterion (SBC) For the purpose of this study Akaike Information criterion (AIC) is selected.

The data gathered from the sources mentioned earlier analyzed quantitatively using E-views 9 appropriate diagnostics__test and key regression statistics first conducted before the estimation of the results.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1.Introduction

The previous chapter discussed the research design employed to achieve the objectives of the study and to test the research hypothesis. In this chapter, the study analyzes the collected data using statistical tool present the result and discussions accordingly.

The main objective of this paper was to investigate the dynamics of the relationship between financial development and economic growth using time series data over the period 1980-2014. The data was obtained from Ethiopia Economic survey (several years), Ministry of Finance and Economic Cooperation and National bank of Ethiopia data and different publications of both NBE and MOFEC for Macroeconomic variables.

4.2.Diagnostic tests

4.2.1. Test for Unit Root

The bounds test approach to co-integration does not need pre-testing for stationary of the variables included in the model, but still it is important to carry out stationary tests on all the series. This is because the ARDL bounds test to co-integration is not applicable if the order of integration is above I(1). It was therefore, necessary to test for stationary of the variables before regression analysis was done. It is notable that stationary properties of time series are investigated by testing for unit roots and there are several methods for testing for stationary. Thus, this study used the commonly used Augmented Dickey Fuller (ADF) (1981) unit root tests. The unit root tests results are presented in Table 2.

Table 2: Unit root test

Augmented Dickey-Fuller test statistic (ADF Test)							
R.no	Variable	With Intercept			Trend and Intercept		
		At Level	At First Difference	Order of []	At Level	At First Difference	Order of []
1	LRGDP	N	S	I[1] at 1%	N	S	I[1] at 1%
2	LM2	N	S	I[1] at 5%	N	S	I[1] at 5%
3	LPC	N	S	I[1] at 5%	N	S	I[1] at 1%
4	LTOP	N	S	I[1] at 1%	N	S	I[1] at 1%
5	LFL	N	S	I[1] at 1%	N	S	I[1] at 1%

Source: Author's computation of E view result S=Stationary, N=Non-stationary

Table 2 shows unit root results of the series at level and first differences. Based on ADF test, all the variables were found to be stationary at their first differences. The results suggest that all the variables considered in this study are integrated of order one, $I(1)$. Thus, with the establishment of the order of integration, the study proceeded to testing for long-run relationship expressed in table 7.

4.2.2. Test for Heteroskedasticity

The presence of heteroskedasticity has been checked for the efficiency model to ensure that the standard errors are not wrong and any inferences made could not be misleading. It is assumed that the errors are homoskedastic or their variance is constant. The null hypothesis is the error terms are homoskedastic. Breusch-Pagan-Godfrey test has been made, to ensure that this assumption is no longer violated. The p-value of both the F- and χ^2 (LM') versions of the test statistic and the p-value of Scaled explained SS must be higher than 0.05 to reject the null hypothesis of heteroskedasticity. It is evident that table 3 the p-value exceeds the critical value which rejects the assumption of heteroskedasticity.

Table 3: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.957417	Prob. F(7,25)	0.1023
Obs*R-squared	11.68323	Prob. Chi-Square(7)	0.1115
Scaled explained SS	13.96616	Prob. Chi-Square(7)	0.0518

Source: Author's computation of E view result

4.2.3. Test for Autocorrelation

Serial correlation is usually a result of model mis-specification or genuine autocorrelation of the model error term. In the presence of such a phenomenon, ordinary least squares are no longer BLUE (Best Linear Unbiased estimators). In such cases R-squared may be over-estimated. In case we have lagged dependent variable to the right hand side, OLS estimators are biased and inconsistent. There was thus every need to test for serial correlation in the residuals.

$H_0: \rho=0$, i.e. no serial correlation

$H_1: \rho=1$ i.e. presence of serial correlation

The rule of thumb is that $DW \approx 2$, i.e. there is no serial correlation

DW < 2, implies a positive serial correlation and

DW > 2 implies presence of a negative serial correlation.

The regression result indicate DW is 2.03 which is approximates to 2 .

The study used Q-statistic Serial Correlation LM test clearly shows there is no serial correlation if the P-value exceeds the 5% critical value as indicated in table 4 there is no serial correlation.

Table 4: Autocorrelation Test

Sample: 1980 2014

Included observations: 33

Q-statistic probabilities adjusted for 2 dynamic regressors

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob*
		1 -0.030	-0.030	0.0316	0.859
		2 -0.346	-0.347	4.4912	0.106
		3 -0.012	-0.042	4.4971	0.213
		4 -0.027	-0.171	4.5271	0.339
		5 -0.147	-0.207	5.4197	0.367
		6 -0.001	-0.121	5.4198	0.491
		7 0.192	0.050	7.0574	0.423
		8 -0.163	-0.261	8.2909	0.406
		9 0.001	0.027	8.2909	0.505
		10 -0.031	-0.266	8.3394	0.596
		11 -0.105	-0.185	8.9195	0.629
		12 0.081	-0.102	9.2779	0.679
		13 0.136	-0.069	10.353	0.665
		14 0.214	0.194	13.138	0.516
		15 -0.087	-0.003	13.629	0.554
		16 -0.198	-0.146	16.282	0.433

*Probabilities may not be valid for this equation specification.

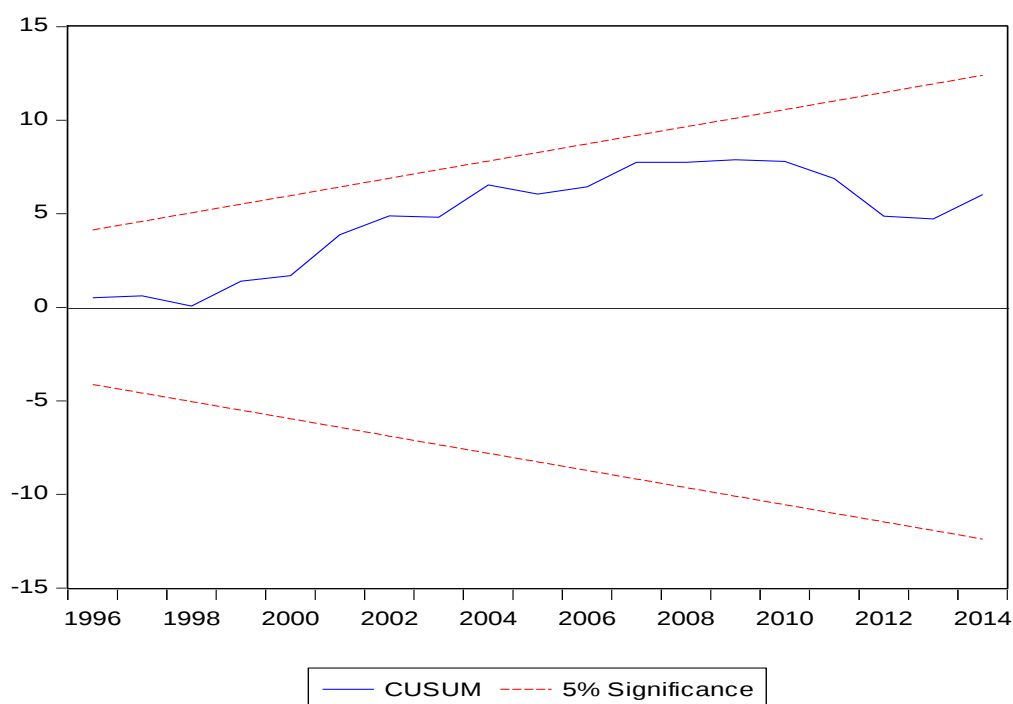
Source: Author's computation of E view result

4.2.4. Test of Model Stability

To check the verifiability of the estimated long run model, some diagnostic test is undertaken. Priority in doing any analysis, required to check the standard property of the model. This study carried a number of model stability and diagnostic checking, which includes Serial correlation test (Brush & Godfray LM test) and Heteroscedasticity test. In addition to the above diagnostic tests, the stability of long run estimates has been tested by applying the cumulative

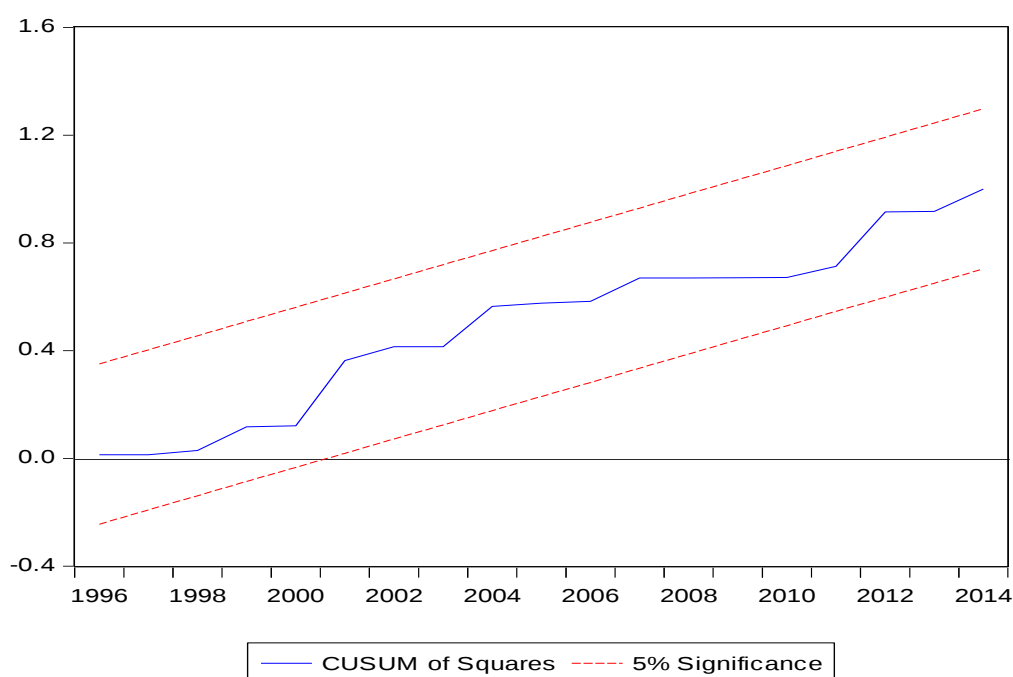
sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) test. Such tests are recommended by Pesaran, (2001). Both (CUSUM) and (CUSUMSQ) test indicate the model is significant at 5% critical value.

Figure 8: CUSUM test



Source: Author's computation of E view result

Figure 9: CUSUMSQ test



Source: Author's computation of E view result

4.3.Key Regression Statistics

R-square

It measures goodness of fit statistics of the model containing the explanatory variables that was proposed actually explain variations in the dependent variable, It is desirable to have some measure of how well the regression model actually fits the data.

In fact, a scaled version of the residual sum of squares is usually employed. The most common goodness of fit statistic is known as R^2 . One way to define R^2 is to say that it is the square of the correlation coefficient between the values of the dependent variable and the corresponding fitted values from the model. A correlation coefficient must lie between -1 and +1 by definition. Since R^2 defined in this way is the square of a correlation coefficient, it must lie between 0 and 1. If this correlation is high, the model fits the data well, if the correlation is low (close to zero), the model is not providing a good fit to the data, while the correlation is high (close to one) the model providing a goodfit to the data.

Table 5: Key regression statistics

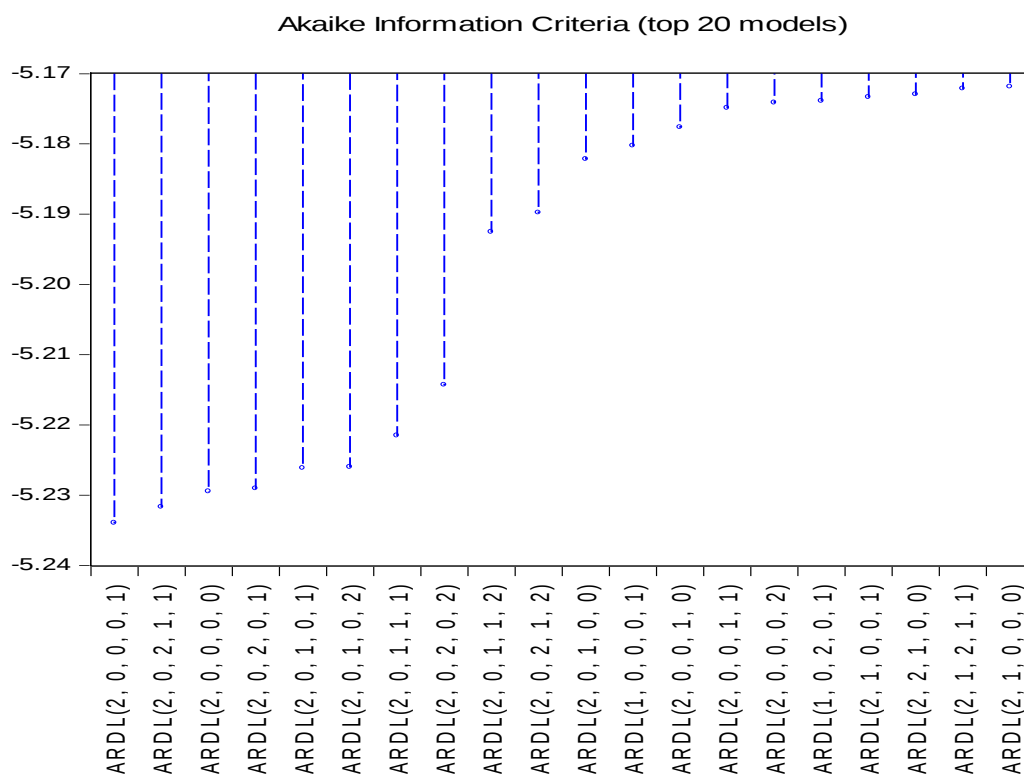
$R^2=0.996286$
Adjusted $R^2 = 0.995246$
Durbin-Watson Statistic = 2.033721
F-statistic =958.1177 Prob(F-statistic) (0.000000)

Source: Author's computation of E view result

4.4.Cointegration Tests

The first step of the ARDL bounds analysis is to investigate presence of long-run relation among the variables included in model. The model was estimated by ARDL and the optimal lag was selected by Akaike Information criterion (AIC) method. From162 model the top 20 is presented in the following figure10.

Figure 10: Akaike Information Criteria



Source: Author's computation of E view result

Table 6: ARDL Bounds Test

ARDL Bounds Test

Sample: 1982 2014

Included observations: 33

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	3.340804	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's computation of E view result

After estimation the author conducted an F-test on joint significance of the variables using ADRL bound Test the F-stat indicate there is a long run relationship at 5%. The table 6 also provides the upper and lower Narayan (2004) critical values. The F-statistics were compared with the upper and lower bound Narayan (2004) critical values.

4.4.1. Long-Run and short run Estimates

ARDL cointegration technique proposed by (Pesaran, 2001) is the most appropriate method for estimation or to check the long run relationship among the variables.

Table 7: Long-run estimated results, dependent variable LRGDP, independent variables LM2, LPC, LTOP & LFL

ARDL Cointegrating And Long Run Form				
Dependent Variable: LRGDP				
Selected Model: ARDL(2, 0, 0, 0, 1)				
Sample: 1980 2014				
Included observations: 33				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LRGDP(-1))	0.262875	0.151114	1.739588	0.0942
D(LTOP)	0.158401	0.032486	4.876025	0.0001
D(LPC)	0.103357	0.049914	2.070687	0.0489
D(LM2)	0.087079	0.036289	2.399580	0.0242
D(LFLI)	-0.006162	0.002330	-2.644554	0.0139
CointEq(-1)	-0.854554	0.163705	-5.220093	0.0000
Cointeq = LRGDP - (0.1854*LTOP + 0.1209*LPC + 0.1019*LM2 -0.0108				
*LFLI + 3.1123)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTOP	0.185361	0.037388	4.957731	0.0000
LPC	0.120948	0.046188	2.618586	0.0148
LM2	0.101900	0.040364	2.524548	0.0183
LFLI	-0.010763	0.001525	-7.057716	0.0000
C	3.112284	0.137910	22.567528	0.0000

Source: Author's computation of E view result

HP1: There is a positive relationship between financial deepening and economic growth (GDP).

The test statistics in Table 7 show that holding other things constant a 1 percent increase in LPC (private sector credit) increase the LRGDP (real gross domestic product) by 12 percent and statically significant at 1percent. This implies that private credit has a positive impact on economic growth. After the fall of the military Regime the current administration is implementing a serious of privatization scheme from real sector to the financial intermediaries have been involved. This involvement is expressed by the volume of credit granted by the commercial banks to the private sector indicate there is a positive and significant impact to the growth.

The test statistics in Table 7 show that holding other things constant a 1 percent increase in LM2 (broad money) increase the LRGDP (real gross domestic product) by 10 percent and statically significant at 1 percent. This implies that broad money has a positive impact on economic growth. This positive effect is explained by the supply of money is consistent with the economic growth of the country for the study period.

HP2: There is positive relationship between financial widening and economic growth (GDP).

The test statistics in Table 7 show that holding other things constant a 1 percent increase in LTOP (trade openness) increase the LRGDP (real gross domestic product) by 18.5percent and statically significant at 1percent. This implies that trade openness has a positive impact on economic growth. This positive effect is explained by the fact that imports are mainly composed of capital investment including crude oil which support facilitate the economic growth where export is gradually increasing in the sample period after the financial reform all the composition of this trade openness has a positive impact on the economic growth of the country.

HP3: There is a positive relationship between financial liberalization and economic growth (GDP).

The test statistics in Table 7 show that holding other things constant a 1 percent increase in LFL(financial liberalization) decrease the LRGDP(real gross domestic product) by 1 percent and statically significant at 1 percent. This implies the financial liberalization has a negative impact on economic growth. This negative effect is explained by the untimely sequencing of the liberalization activity which doesn't have a consistency with the proposed reform

measures of financial reform by the Pioneers (Mckinnon1991) render an adverse net benefit of financial liberalization on economic growth meaning the financial liberalization does in fact harm the economy through various macro economic shocks.

The error correction model provides information of partial adjustment and allows for estimation of short-run elasticities. The coefficient of the ECT in the Error correction model shows the speed of adjustment towards long-run equilibrium following a shock to the system. The coefficient of ECT should have a statistically negative sign. According to the results in table 7, the ECT is negative (-0.854554) as expected showing that the adjustment is towards the right direction to restore long-run equilibrium. The coefficient of ECT is statistically significant at 1%; this shows that the deviation of GDP from equilibrium values is corrected by 85.45% in the following year. The adjustment towards equilibrium takes place very quickly. Hence, the significant ECT confirms the existence of long-run equilibrium relationship among GDP, M2, TOP, PC and FL of the economy as well.

4.5.Causality Test on Finance-Growth Variables

In order to examine whether one variable is causally related to another, Granger (1969) introduced a concept of causality which is commonly known as, 'Granger causality'. The concept is based on the idea that the future cannot affect the present or the past. In a bivariate framework, if current and lagged values of X improve the prediction of the future value of Y, then it is said that X 'Granger causes' Y.

There has been a long debate about the direction of the causality between financial development and economic growth and with a view to examine the issue of the causality and direction in the Ethiopia context, the Granger causality test is conducted.

The unit root test shows that the proxy of economic growth (LRGDP) and the proxy of financial development (Broad money) (M2) are non stationary series. As variables have to be stationary for the Granger causality test, the first difference of LRGDP and M2 is used.

There are four possible cases related to the direction of the causality between LRGDP and LM2, which are:

- 1) Unidirectional causality from LM2 to LGRDP
- 2) Unidirectional causality from LRGDP to LM2
- 3) Bilateral causality or feedback from each other

4) Independence from each other or no causality

The data of the time series are in annual form. A lag length of 2 has been chosen for the above models. The Granger causality test results are given in Table 8 below.

4.5.1. Granger Causality Results

The dynamic relationship is the simplest technique used to examine the cause and effect relationship between variables and it is applied in the context of the simple linear regression model. However, the simple linear regression model fails to capture the underlying dynamic causality between variables which is efficiently analyzed by Granger (1969) in terms of the Granger causality tests.

HP4: There is a unidirectional relationship that runs from economic growth to financial development (demand following hypothesis).

Table 8: Granger Causality test

Pairwise Granger Causality Tests

Sample: 1980 2014

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DLM2 does not Granger Cause DLRGDP	32	2.01511	0.1529
DLRGDP does not Granger Cause DLM2		4.31954	0.0236

Source: Author's computation of E view result

The above test results show that F-statistics for the second case is significant. This implies that the null hypothesis for the second equation cannot be rejected at the 5 percent level. From these results, it can be concluded that there is a causal relationship between economic growth and financial development and in other words, the financial sector is dependent on the economic growth in the period of 1980-2014.

This result is in line with the findings of (Gurley and Shaw, 1967; Goldsmith, 1969; Atindehou, 2005; Ghirmay, 2004; Levine, 2005; Odhiambo, 2007; Majid and Mahrizal, 2007; Odhiambo, 2007; Ang, 2008; Demirgüç-Kunt and Levine, 2008 and Quartey and Prah, 2008; Odhiambo, 2008; Handa and Khan, 2008; Gries, 2009; Odhiambo, 2009; Odhiambo, 2010; Gries, 2011) implying that the 'demand-following' hypothesis that is, the unidirectional causality running

from economic growth to financial development.

This result also in line with the most recent result in the developing country, that the finding of (Odhiambo 2008, Muhammad and Muhammad 2010) implying that economic growth granger causes for financial development when broad money (M2) is used as a proxy variable for financial development. i.e. Accept the demand following hypothesis.

CHAPTER FIVE

CONCLUSION AND FUTURE DIRECTION

In the first section of this Chapter, major empirical findings of the study and indicate the policy implication; the second section discusses future research direction.

5.1. Empirical finding and Policy Implication

This paper examined the long-run, short-run and causality analysis between financial development and economic growth in Ethiopia. The study used the Autoregressive distributed lag (ARDL) bounds testing procedure to examine the presence of long-run and short-run relationship among the variables and to investigate the association between economic growth and financial development further to assess the direction of causality between the variables and financial development and economic growth Granger causality test has been conducted.

Empirical results showed that there is a significant positive long run relationship between economic growth and financial Deepening represented by broad money and private sector credit, it indicates the financial development have contributed positively to the economic growth. Also the financial widening represented by trade openness has a positive significant association with economic growth. This is due to the fact that most imports are capital investments which further enhance the use of factors of production meaning the imported goods are contributing to employment of resource as well as increase in the country's output.

The association between financial liberalization and economic growth indicates negative effect of the financial reform on economic growth this implies the untimely sequencing of the liberalization activity which doesn't have a consistency with the proposed accepted theoretical reform of the measures and timing of financial reform. The results signify the financial liberalization does in fact harm the economy through various macro-economic shocks.

The short term result indicates the convergence to the equilibrium is very quick. Further the causality test supports demand following hypotheses. Consequently, the results suggest that growth of the economy is leading the financial sector in Ethiopia. The result implies the strong presence of the government intervention on the financial sector.

5.2 Future Research Direction

It is worth to note not only benefits, but also the costs should be taken into account while assessing the effects of any policy implementation. Besides the expected changes, each and every policy may bring certain unexpected changes also, positive or negative, as the side effect of its implementation. A zero or negative impact on the targeted field and negative impact on other non-targeted fields may become the cost of the policy implementation. Although such costs cannot be quantified, these should be taken into account while conducting the impact evaluation. Therefore, future studies should try to develop some measures to quantify such costs. Thus with in this context the following future research direction is recommended.

- According to the finding, financial reform tends to deliver adverse impact on the economic growth hence the finding conforms (Li D., 2001) argument that in the early stages of economic growth mild repression increase growth and stabilize the financial sector. But the repression results in containment of the economy and hence results in loss of the opportunity cost. The adverse impact of financial repression on the economic growth need further study.
- Despite encouraging changes in its financial restructure, the Ethiopian financial sector is dominated by a cash based system. Moreover, there is no stock market and the financial market comprising the interbank money and foreign exchange markets as well as the bond and TBs market is at an infant stage accommodating limited amount of transactions. The impact of the absence of the narrow financial instrument on economic growth and financial development can be considered as area of research.

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