

THE EFFECT OF FINANCIAL LIBERALIZATION ON ECONOMIC DEVELOPMENT IN ETHIOPIA

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Statement of Declaration

I, Omer Mohammed Ahmed, hereby declare that this thesis entitled “The Effect of Financial Liberalization on Economic Development in Ethiopia” submitted by me for the award of the degree of Master of Accounting and Finance, Addis Ababa University at Addis Ababa, Ethiopia, is my original work and it has never been presented in any university. All sources and materials used for this thesis have been duly acknowledged.

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This is to certify that the thesis entitled, “The Effect of Financial Liberalization on Economic Development in Ethiopia” was carried out by Omer Mohammed Ahmed under the supervision of Ababaw Kassie (PhD), submitted in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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List of Acronyms

CSA	central statics agency
CDR	Credit-Deposit Ratio
EAL	External Account Liberalization
ECC	Easing in credit controls
FD	Financial Depth (total time deposits divided by GDP)
FLI	Financial Liberalization Index
FY	Fiscal Year
GDP	Gross Domestic product
GDPR	Real GDP
GDPP	Real GDP per capital
IPR	Implementation of prudential rules
IRD	Interest Rate Deregulation
IRR	Real Interest Rate
LCDR	Log of the credit–Deposit Ratio
LFD	Log of the Financial Depth
LGDPP	Log of the Real per capital GDP
LGDPR	Log of the Real GDP
LNGDPR	Log of the Real Non-agricultural Sector GDP
LPBB	Log Of the Average population Density per Bank Branch
LBCSS	Log of banks credit to selected sectors
LR	Lending Rate of commercial Banks
LRR	Real Lending Rate of commercial Banks
LRROL	Log of ratio of return on outstanding loan
LSBCP	Log of the Share of Bank Credit to private sector in the Total Bank Credit
LSNGDP	Log of the share of Non-agricultural Sector GDP in the total GDP
LSBCSS	Log of share of Banks credit to Cooperatives

LTBCR	Log of the Real Total Bank credits
LTDR	Log of the Real Time Deposits
LVBT	Log of the Real Total Volume of Bank Transaction
LVBTP	Log of the Real per capital volume of bank transaction
MOFEC	Ministry of finance and economic corporation
NBE	National Bank of Ethiopia
NGDPR	Real Non-agricultural sector GDP
NPL	Non-performing Loan (bad loans)
PBB	Average population density per bank branch
PBCIA	per capital Bank credit to industry and agriculture sector
PSB	privatization of state-owned Banks
REB	Removal of entry Barriers
RRR	Reeducation in reserve requirements
SBCP	Share of Bank Credit to private sector in the Total Bank credit
SMR	Stock Market Reform
SNGDP	Share of Non-agricultural Sector GDP in the total GDP
TBCR	Real Total Bank credits
TBs	Treasury Bills
TDR	Real Time Deposits (at banks)
VBT	Real Total Volume of Bank Transaction
VBTP	Real per Capital Volume of Bank Transaction

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Abstract

Financial Liberalization emphasizes on the leading role of market forces in the financial sector of the economy and it is one of the debatable issues in the world economy. However, it is far from clear how financial liberalization actually affects the economy in general and the financial system in particular. Thus, this study aims to empirically examine the impact of financial liberalization on economic development in Ethiopia over the period of 1984-2014. In doing so, the ARDL approach to Co-integration and Error Correction Model were employed to investigate the long run and short run relationships. Accordingly, the empirical results obtained from the study indicate that financial widening has contributed significantly to the increase in saving and the level of economic growth. Even though, the total deposit happens to generate more investment; there is shortage of supply of credit. In addition, the study indicates financial widening and credit to the private sector exhibited a significant positive association with financial development while total banks credit bearing a significant impact on industrial development. However, the overall financial reform showed insignificant association both with economic growth and industrial development. The efficiency in allocating financial resources show significant positive association with share of banks credit to the private sector, however, the overall financial reform has positive insignificant impact on efficiency of resource allocation. The contribution of financial sector after the deregulation has a mixed result on welfare. In terms of catalyzing employment opportunity, financial widening and the overall liberalization policy measure have played a positive role while the financial development has no significant impact on employment creation. Financial widening has significant positive impact on poverty alleviation while the overall policy measure has insignificant impact on the impoverished. Consequently, the result of the study indicate the overall financial liberalization measure actually decrease the likelihood of financial instability and indicates the direction of causality going from economic growth to financial development proving the demand leading hypothesis, which in turn portrays the heavy involvement of government in the financial sector.

Key words: Financial liberalization, Financial liberalization index

CHAPTER ONE

INTRODUCTION

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

1.1. Background of the Study

The fragile and inefficient state-dominated and repressed financial sector was the main feature of the Ethiopia economy during the military government (1974-1991) which was a major hindrance to economic growth. Since it took power in 1991, the current government has implemented a number of reforms to the financial system.

Such a move of governments are almost in all cases deliberated with in the two schools of thoughts regarding the possible benefits of financial reform aimed at financial liberalization: The first is the Goldsmith-McKinnon-Shaw school which argues financial liberalization is the only effective means to develop banking intermediation, to start again the capital accumulation and to promote the economic growth in the countries. (McKinnon, 1973) And (Shaw, 1973) come to present the misdeeds of financial repression and to defend the founded good of financial liberalization. The second is Keynes-Tobin-Stieglitz (also called the Structuralism and Neostructuralists School) propagated in favor of certain sort of financial repression due to economic benefits and vulnerability to persistent market failure. (Kahsay, 2014). Using various economic models, each provides background, rationale and intellectual justification for financial liberalization vis a vis financial repression. (Ahmed & Islam, 2010).

Financial liberalization has been proposed as a cure to the ills of repression with a belief that it improves and enhances the efficiency of investment and eventually economic growth. Overall, financial liberalization has been broken down into three major reforms. This is the liberalization of the movement of capital, the opening of financial markets to international operators and deregulation in lending and deposit rates to increase interbank competition. The proliferation of crises in countries such as Mexico (1995), Asian countries (1997), Brazil (1998), and Turkey

(2001) opened the debate on the benefits of deregulation of financial activity. (Farhani,et al. 2015)

Government intervention in the financial system, including the setting of interest rates, the imposition of high reserve requirements and quantitative restrictions on credit allocation, was fairly common practice in the 1960s and 1970s, especially in developing countries. That practice was challenged initially by (Goldsmith, 1969) and later (McKinnon, 1973) and (Shaw, 1973), who saw it as being responsible for low savings, credit rationing and low investment. They referred it as financial repression. They presented their views criticizing the repressed financial system which was assumed to be the reason for low performance of financial sectors of most of the developing economies. In their theory of Financial Repression Hypothesis, they assert that, regulated nominal interest rates among other components, undermine not only the efficiency of financial intermediation but also interfere with allocation of resources and as a result, cause fragmented financial markets, dependence syndrome and poor long run growth to most developing countries. Economies possessing typical characteristics of financial repression show symptoms of heavily regulated interest rates, state-influenced credit allocation, frequently adjusted reserve requirement and tightly controlled capital account. (Wang & Huang, 2011)

As a remedy the (McKinnon, 1973) and (Shaw, 1973) proposed the financial liberalization thesis, which essentially involved freeing financial markets from government intervention and letting the market determine the price and allocation of credit.

Accordingly, the Ethiopian government in line with approaches discussed there off took measures toward the reformation of the financial system. For instance, in 1994, the government legalized domestic private investment in the financial industry. In addition, it restructured the two development banks as commercial banks, and introduced a new Banking and Monetary Proclamation that gave more autonomy and further clarified the National Bank of Ethiopia's activities as the regulator and supervisor of the banking sector. (Bezabeh & Desta, 2014)

Most previous studies have seen the effect of financial liberalization in fragmented approach focusing on a specific aspect of growth or financial development or stability, while a few examines the welfare aspect they have left out major aspect of economic development uncovered. As a result, this study is conducted within the perspective of financial liberalization

on growth, welfare and stability to assess the effect of the policy measures in unambiguous and meaningful manner.

Hence considering the above premise the study is organized 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 fourth chapter presents 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

Financial Liberalization emphasizes on the leading role of market forces in the financial sector of the economy and it is one of the debatable issues in the world economy since the introduction of (McKinnon, 1973) and (Shaw, 1973) separate work stressed on the potential role of higher interest rates in mobilizing savings that could be put to productive use. This liberalization has been characterized by greater scope being granted to market forces in determining interest rates and in allocating credit (Caprio, et al, 1994). But it is far from clear that financial liberalization actually does increase private savings. One obvious and important consideration is that the effect of interest rates on savings is itself ambiguous, as the income effect might offset substitution effects. In addition, one must recognize that financial liberalization involves more than just a change in interest rates. Other dimensions of financial liberalization, such as increased household access to consumer credit or housing finance, might also work to reduce private savings rather than increasing them (Muellbauer & Murphy, 1990) (Jappelli & Pagano, 1994) and (Nair, 2004). (Bandiera, et al, 2000) found out that there was no evidence of positive effect of the real interest rate on saving. In most cases the relationship was negative.

(Bascom, 1994), noted further that real interest rates became positive in the countries where financial reform has initially been unsuccessful. But, the levels of these rates remained too high or were so volatile that they became a disincentive to domestic investment. (Reinhart & Tokatlidis, 2001) Argue that with greater certainty, financial liberalization appears to deliver higher real interest rates, economic growth but lower investment.

(Akyuz, 2014), states there is no simple relationship between interest rate and saving in recent evidence of developing countries who changed their interest rate policy. Investment reallocation is not the only and even the most important reason for financial deepening it is worth to note that financial liberalization can also lead to deepening by redistributing savings and investment among various sectors, and by creating greater opportunities for speculation. Since these can worsen the use of savings, financial deepening is not necessarily a positive development.

In terms of growth liberalization was theorize to accelerate economic growth and enhance efficiency through positive interest rates effect on savings and investment. Various empirical studies have been conducted to validate whether financial liberalization has a favorable impact or otherwise. (Akpan, 2004), (Fowowe, 2004) (Abu-Bader & Abu-Qarn, 2005), (Tokat, 2005), (Okpara, 2010) and (Banam, 2010) concluded that financial liberalization positively increases the growth of the economy in their investigation. Whereas (Munir,et al, 2010), confirmed that financial liberalization made no significant impact on economic growth. (Achy, 2003), suggested that financial liberalization has led to further distortion of credit allocation in favor of consumption at the expense of productive activities because the financial depth indicators fail to explain growth experience. The study shows that financial liberalization is in line with the Keynesian view and inimical to financial development.

The removal of entry barriers is another dimension financial liberalization advocate; it states that removal of barrier will lead to an increase in the number of financial institutions in the market and as a result the financial sector will be widened consecutively causing an increase the financial depth of the economy by increasing financial resources available to investors. Enhancements of the resource allocation from inferior venture to high yielding ones are expected to occur. The supporters of Financial Liberalization argue that government restriction on the banking system obstructs the flow of investments degrading its quality and quantity. A number of authors conform that financial liberalization explicitly affects the efficiency of banks. Increased bank efficiency can also manifest in the high competition prevalent in the banking sector, in the new technology being patronized and in the new features of products intended to reach various kinds of consumers. (Meso & Kaino, 2008) .

Equal distribution of income is one of the vital issues in developing countries. The pattern of distribution of income is reflected in employment status and inequality status of an economy. One of the major drawbacks of financial liberalization cited frequently by the critics of liberalization is that it ignores welfare and leads to unequal distribution of income. Under the financial liberalization process, market becomes dominant, competition prevails in the market, and government subsidies are cut, and the deprived sector and the strategically important sector. (Shaw, 1973) Claims, that the stability of growth in output and employment are contributions of financial liberalization. A rise in interest rates and foreign-exchange rates relative to wage rates may both raise employment and increase the wage share of income.

Despite the efforts made by the government of Ethiopia in liberalizing the financial sector, the overall contributions of financial liberalization to major economic factors as well as the bidirectional effect between the variables remain a mystery. Previous Studies carried out on other hand as discussed in the literature review mostly concentrated on analyzing its effect using its components like interest rates liberalization, loan disbursement and total deposit.

This study seeks to put to light how financial liberalization in its completeness has affected Financial Sector Widening, Savings and Investment, Economic Growth, Industrial Development, Financial Development, Efficiency in Resource Allocation, Employment Opportunities, Poverty Alleviation and Redistribution of Income, and Financial Stability.

A wealth of literature has addressed this issue by either cross-country or time series analysis, as exemplified by, (Achy, 2003); (Akpan, 2004); (Bascom, 1994) and (Fowowe, 2004) these studies provide important policy implications especially for developing countries which are under researched. Notably, Ethiopia has not featured in the cross country studies that have included some of the Sub Saharan African countries. In terms of Single country studies none have been carried out in the scope of this particular study on Ethiopia prior studies conducted by (Garedachew, 2011) viewed sequencing of the financial liberalization qualitatively, while (Kahsay, 2014) focused on the banking sector liberalization on economic growth; sequencing and timing process and assess performance indicators using ADRL co-integration approach. The previous researches have viewed financial liberalization in fragmented and using different variables from the current study and none have been conducted in a complete set of frame work

to explain the impact of the change in Policy variables according to the knowledge of the researcher.

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

1. Does financial liberalization enhance investment, industrialization and economic growth in Ethiopia?
2. Does the liberalization increase the efficiency of financing and create stability in the financial sector?
3. Is the liberalization enhancing the welfare of the Ethiopians?

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 study is to analyze the effects of financial liberalization on different measures adopted in the process of financial liberalization in Ethiopia have been assumed brought some changes in different aspects of the financial system and the country's national economy. In order to ascertain its effectiveness, it is necessary to conduct the impact evaluation of the policy. In this regard, this study intends to examine the impact of liberalization in terms of growth, distribution and stability in Ethiopia.

1.3.2 Specific objectives:

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

The specific objectives of the study are as follows:

1. Establish the Financial Liberalization Index for Ethiopia
2. To evaluate the impact of the liberalization measure on investment
3. To evaluate the impact of the liberalization measure on saving
4. To analyze the impact of liberalization on Economic Growth
5. To analyze the impact of liberalization on Industrial Development
6. To evaluate the impact of liberalization on Efficiency in financial Resource

Allocation

7. To assess the impact of liberalization in financial Stability.
8. To examine the impact of liberalization on social welfare of the society

1.4 Research Hypotheses

As mentioned above, the main objective of this study is to examine the impact of financial liberalization in Ethiopia on the national economy in general, and on the financial system in particular. Following the framework presented in the preceding section, the following groups of hypotheses will be tested in this study.

H1: Financial liberalization widened the financial sector in Ethiopia.

H2: Financial liberalization increased domestic savings in Ethiopia.

H3: Financial liberalization increased investment in Ethiopia.

H4: Financial liberalization accelerated economic growth

H5: Financial liberalization enhanced industrial development in Ethiopia

H6: Financial liberalization enhanced financial deepening in Ethiopia.

H7: Financial liberalization improved resource allocation in Ethiopia.

H8: Financial liberalization increased employment opportunities in Ethiopia.

H9: Financial liberalization improved distribution of income in Ethiopia.

H10: Financial liberalization improved financial stability in Ethiopia.

1.5 Significance of the study

Knowledge of the extent to which financial liberalization impacts on a complete set of framework is paramount importance to both the policy makers and to the academicians. The findings of this study are believed to provide a useful contribution to the empirical basis needed for proper understanding of the previous measures as well as management of the future sequencing of the liberalization process. The study also adds value to the stock of knowledge by using acceptable approach of financial liberalization index as an indicator of the financial sector progress in the Ethiopian economy.

1.6 Scope and limitations of the study

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

1.6.1 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 evaluate Ethiopian economy. This is due the absence of studies that featured in the current research scope in neither cross-sectional nor case wise, according to the researcher's knowledge within the current studies objective in the past. In terms of time, it covers the time period 1984-2014 G.C. this period is selected due to the data availability of major variables used in this study. The data's cannot stretch for more than 31 years as some of the variables have not been kept as a data by the country.

1.6.2 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 is data about the actual dates of deregulation of some policy variables in the researcher's preliminary survey was not readily available policy variables such as stock market establishment and privatization of commercial banks are inexistent could not be used in the construction of the financial liberalization index. It is hoped that this did not bias the results since their inexistence can be captured indirectly through absence of the variables.

1.7 Structure of the study

This study is organized in five chapters. The first chapter deals with background of the study, research questions, objectives of the research, Hypothesis, significance of the study, scope and limitation of the study, and finally the Structure of the study. The second chapter discusses concepts and theories related to the area of study. 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 conclusion and knowledge gap finally. Third chapter presents the research design and methodology as well as the model specification. The fourth chapter discusses the presentation, analysis and interpretation of the data collected and the last chapter makes summary of main findings, conclusion and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

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 liberalization.

2.1 The Role of Finance on Economic Growth

From a theoretical standpoint, different approaches have been applied in investigating the role of finance on economic growth for instance, (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), argue that financial development is a result of improvements in economic performance. Accordingly, the first perspective is called the ‘demand following’ hypothesis, while the second is called the ‘supply leading’ hypothesis (Patrick, 1966). The fundamental question in relevant empirical literature is: What role does financial development play in economic growth of a nation? To answer this, it is necessary to investigate the causal relationship between the two variables (Levine R. , 2005); (Ang, 2008); (Demirgüç-Kunt & Levine, 2008); (Shahbaz et al. 2010). Although the direction of causality has received much attention from researchers, the nature of this causal relationship remains vague (Calderon & 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 in these countries. Results from earlier studies of financial development and economic growth fall into four broad categories:

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.

2.1.1 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 K. L., 1984); (King & Levine, 1993a); (Blommestein & Spencer, 1996); (Levine R. , 1997); (Rajan & Zingales, 1998); (Levine R. , 1999); Beck, Levine et al. 2000; (Xu, 2000); (Carlin & Mayer, 2003); (Fase & Abma, 2003). This view suggests that the direction of causality runs from the financial to real development

(Gupta K. L., 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 & 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, *et al.* 2000) employ 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 & 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 & 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, 1973) 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 M. J., 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 claimed 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 a 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 R. , 1997).” 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 & Levine, 1993a) and subsequent work by (Levine & Zervos, 1998), (Levine R. , 1999), (Levine, et al, 2000) and (Beck & Levine, 2001) have provided 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. Furthermore, (Levine R. , 1999) 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 Per capita GDP is the most commonly used measure of economic growth. Yet, (Levine R. , 1997) uses 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, et al, 2010) examined 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 (Pesaran, et al. 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.

(Christopoulos & 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.

2.1.2 Demand Following Hypothesis view

Some prominent economists view finance as a relatively unimportant factor in economic development. (Robinson, 1952) Claims, that financial development primarily follows economic growth. She asserts: "by and large, it seems to be the case that where enterprise leads finance follows." Similarly, (Lucas, 1988) states, "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.

(Odedokun, 1996), studied 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.

(Odhiambo N. M., 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 & 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.

2.1.3 Bi-directional Causality view

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

(Greenwood & Jovanovic, 1990), found growth inextricably linked with financial structure. 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. (Luintel & 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.

(Patrick, 1966), proposes 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.

(Songul, Ilhan, & 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 co-integration 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 & 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 co-integration 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 & Egbetunde, 2010), Investigated co-integration 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.

2.1.4 No Causality view

Contrary to the above assertions, some studies do not find any strong causal relationship between financial development and economic growth (Demetriades & Hussein, Does Financial Development Cause Economic Growth? Time-series Evidence from 16 Countries, 1996); (Ram, 1999).

(Demetriades & Hussein, Does Financial Development Cause Economic Growth? Time-series Evidence from 16 Countries, 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.

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.

2.2 Financial Repression

Government intervention in the financial system, including the setting of interest rates, the imposition of high reserve requirements and quantitative restrictions on credit allocation, was a fairly common practice in the 1960s and 1970s, especially in developing countries. That practice was challenged initially by (Goldsmith, 1969) and later by (McKinnon, 1973) and (Shaw, 1973), who saw it as being responsible for low savings, credit rationing and low investment. They called it financial repression. It is the flip-side of financial liberalization or the reverse of dimensions of financial liberalization. The term ‘financial repression’ was initially coined by (McKinnon, 1973) who defined it as government financial policies strictly regulating interest rates, setting high reserve requirement on bank deposits, and mandatorily allocating resources. Such repressive policies are common in developing countries would impede financial deepening and hinder efficiency of the financial system consequently; they retard economic growth (McKinnon, 1973); (Shaw, 1973).

Financial repression policies include, but are not limited to, subsidizing loans for specific sectors, heavily regulating the banking sector, and controlling interest rates. The result is an artificially low cost of funding, i.e. non market interest rates. Consequently the interest rates do not serve an equilibrating function between the saving and investment decision. (Berthelemy & Varoudakis, 1996a) Define all such policies and regulations which prevent financial intermediaries from operating in accordance with their full technological potential as forms of financial repressions.

Financial repression is generally equated with controls on interest rates and, in a strict sense, controls which result in negative real interest rates on deposits (Kitchen, 1986).

From a broader perspective as envisioned by (Giovannini & De Melo, 1993), financial repression also encompasses restrictions on international capital flows as well as the fiscal dimension that ties financial repression with inflation tax and seigniorage¹. From a more policy oriented view (Serieux, 2008) notes that financial repression is a consequence of misguided fiscal and monetary policies, the over regulation of the financial sector, other repressive public sector intervention and excessive borrowing from the local financial system, thus potentially ‘crowding out’ investors. From a review of existing literature on the subject, it is interesting to note that financial repression is mainly prevalent in developing countries (Arestis, 2005); (Brock, 1989); (ANG & McKibbin, 2007); (Giovannini & De Melo, 1993) and (Serieux, 2008). The governments must perceive a strong case for financial repression in parts or as a whole. The following section will explore the rationale employed in the choice of financial repression.

2.3 Rationale of Financial Repression

The main reason why governments resort to financial repression is to control fiscal resources (Giovannini & De Melo, 1993). (Denizer, Desai, *et al* 1988) and (Roubini & Sala-i-Martin, 1992) argue that in most developing countries fiscal deficits are significant and persistent. They do not have efficient taxation systems. Therefore, in order to finance their fiscal deficits, governments may choose to repress the financial sector because it delivers them easy inflationary revenue ‘easy’ revenues or seigniorage¹ revenues. As such the finance sector is viewed as a cheap source of financing government deficits (Fry M. J., 1995). (Brock, 1989), offer other frequently sighted reasons for financial repression. These are; restraining the level of domestic debt, the gain from seigniorage, more control of money supply through direct instruments of monetary policy, supplying credit to chosen sectors and keeping the cost of credit in the economy low.

The gain from financial repression maybe quite significant in terms of the gains made from seigniorage and inflation tax. Especially in cases where the inflation is high and monetary

¹ *Seigniorage* “is a term derived from the French word ‘seigneur’, which means lord. In medieval times, one of the rights of the feudal lord was to coin money that his subjects had no choice but to accept, no matter how little gold or silver it contained. Seigniorage was the profit the lord made by exercising this right (Espinosa and Hunter 1994, p.4).

authorities use direct measures for monetary policy (Giovannini & De Melo, 1993). Similarly, financial repression is associated with interest rates below market rates, which reduces the costs of servicing government debts (Roubini & Sala-i-Martin, 1992). In effect governments are extracting the seignorage from the local financial institutions. The government may achieve their goals by actually enacting laws that dampen the growth of private bond and equity markets, as these may not be easily exploited for seignorage.

Monetary expansion is a much easier method of financing government expenditures. The money is simply printed on the backing of government securities. No government tax collectors are required, and government expenditures appear to be financed at little cost to the public. Legislative approval is often not required. Seigniorage extraction is a less problematic method of raising revenue. It can be accomplished by imposing large reserve requirements on commercial banks. These reserve requirements force commercial banks to hold government liabilities such as currency or government bonds beyond the point they would otherwise consider optimal. Through such large reserve requirements, the monetary authority, and eventually the government, avails itself of part of the economy's savings that would otherwise remain with financial intermediaries (Espinosa & Hunter, 1994).

Another frequently cited reason behind financial repression is imposing the anti-usury law to intervene in the free determination of interest rates, in order to protect the public from exploitation. Financial markets in developing countries are usually relatively small and under developed. Furthermore, they typically have oligopolistic or monopolistic structures. Such non-competitive structures may disturb the proper functioning of interest rates as guides for decisions on savings and investments (Dornbusch & Giovannini, 1990). As such, interest rates may be kept at levels lower than market equilibrium, under the guise that these low interest rates may avail funds to public sectors that will result in wide reaching gains. Furthermore the incumbent banks would collude so as to gain from their structure and interrupt policies on liberalization that would bring financial deepening and competition thereby compromising their profits.

The channeling of credit to certain chosen sectors at subsidized interest rates is referred to as credit rationing (Ghosh *et al*, 1999). It is the allocation of subsidized credit to the favored sector is another form of financial repression. Such directed credit programs are carried out due to the government's belief that commercial banks allocate credit in a largely speculative and

socially undesirable fashion, and that they knew better than markets what the optimal allocation of savings was, or what kind of investments were more or less desirable (Roubini & Sala-i-Martin, 1992) . This claim was frequently supported with evidence from high-growth economies in East Asia, where governments supposedly manipulated financial systems in order to promote targeted industrial expansion (Denizer, Desai, et al. 1988).

In adding to repressive legal statutes the government may also resort to more direct forms of repression i.e. large reserve requirements for banks, compulsory holdings of government stock and foreign exchange controls (Serieux, 2008).

Traditionally there was also support for financial repression given that through legislations and restrictions on the financial market credit creation ability, it was possible to exert control over the supply of money. Thus, enabling the monetary authorities to use direct instruments of monetary control in order to manage inflation therefore positively influencing economic growth (Vittas, 1992)

2.4 Types of Financial Repression

The types of financial repression emanate from the different forms that financial regulation may take. Any financial control that is over-exerted or that produces results that adversely affect the economy may be considered repressive. In concordance with this notion, (Vittas, 1992), puts forward six types of financial sector controls that may produce distortions and a tax on activities of financial intermediation. These include allocative, organizational, macroeconomic, protective, prudential and structural controls. It is noteworthy that the controls are not mutually exclusive as a particular control measure employed may serve the function of one or more of the controls.

In order to maximize profits, banks tend to provide credit to projects which have low risks or high risk projects with short payback periods. As opposed to financing projects that have high risk and long payback periods even if such projects may positively affect the economy. As such a government may initiate allocative controls such as compulsory reserve requirements, preferential taxes and credit rationing. Allocative control measures are viewed as compensating for the externalities caused by market failure. However, an excess of such actions may prove

repressive as private investors are left to compete for scarce credit. In so doing, a number of projects with higher profits and or greater benefit to total productivity are not completed.

(Vittas, 1992), Proposes that structural controls stem from political and economic considerations. Structural controls govern the entry of financial institutions and buttress the fragmentation of the local financial market through the imposition of restrictions on the size of institutions and the range of activities they may undertake.

Prudential, organizational and protective controls are set in place to protect the customer as well as to fortify the financial system. Prudential controls endeavor to minimize the risk of systemic failure and they include regulation measures on capitalization, management, risk management and enforcing accounting policies. Protective controls are measures set in motion to safeguard the customers of financial services from problems created by information asymmetries, which according to (Vittas, 1992), may include compensation funds and ombudsman offices. On the other hand, organizational controls seek to bridge the gap created by externalities. These are caused by the existence of markets such as the stock exchange, other trading exchanges, payment clearing systems and information networks. Thus organizational controls encourage the disclosure and flow of information in the market with a view to advancing market efficiency.

Given the need to control expansion of credit and price stability, governments often impose controls on reserve requirements, interest rate ceilings, selective credit allocation methods (credit rationing), restrictions on foreign investments and importantly interest ceilings which are collectively referred to macroeconomic controls (Vittas, 1992). Such controls are viewed to be targeted at maintaining internal and external equilibrium and it is also that stringent control in the financial system gives monetary authorities increased control over money supply.

2.5 Consequence of Financial Repression

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.*

The negative impact of financial repression on efficiency and growth is widely accepted and is the theme of a large body of literature. (Pagano, 1993), showed that financial policies such as interest rate controls and reserve requirement lowered financial resources available for financial intermediation. (Roubini & Sala-i-Martin, 1992), Presented theoretical and empirical analyses of the negative relationship between repressive financial policies and long-term growth (King & Levine, 1993a) developed an endogenous growth model to illustrate that financial sector distortions reduced growth by lowering the rate of innovation.

(Haslag & Koo, 2003), assess the empirical link between financial repression, financial development and growth of data from 119 countries using 1960-1989 years. They used inflation rate and reserve ratio as measures of financial repression concluded that countries with high reserve ratios, on average, grow more slowly than countries with low reserve ratios. Countries with high reserve ratios also tend to have less developed financial systems than countries with low reserve ratios. And, countries with high reserve ratios, on average, have high inflation rates as well.

Another study conducted by (Roubini & Sala-i-Martin, 1995) study using the data from 98 countries for the period of 1960-1985 claim that policies of financial repression have negative effects on economic growth. They find a systematic inverse relation between growth and several

measures of financial repression, as well as a negative relation between growth and inflation rates. According to them, countries that are financially repressed will have higher inflation rates, lower real interest rates, higher base money per capita and lower per capita growth than countries that are financially developed. This result suggests that financial repression is harmful to economic growth. Further in the literature claim Repressive policies hurt economic growth because financial intermediation is an important component of the aggregate production function. The marginal product of capital of an economy more financially developed is larger than the marginal product of a less financially developed economy.

(Shrestha M. B., 2005), states High inflation is one of the main characteristics of a repressed economy citing (De Gregorio & Guidotti, 1995) which documents the evidence that the level of inflation and its variability, as well as money growth, have negative effects on economic growth.. He claims that if inflation rates had been half of their level in 12 Latin American countries during the 1950-85 periods, per capita GDP growth would have been at least 25 per cent higher. The findings suggest that the main channel through which inflation affects growth is through the reduction of the productivity of capital.

The distortions created in the financial system by the policy of repression crowd out high-yielding investment, create a preference for capital-intensive projects, discourage future savings, and thereby reduce both the quality and quantity of investment in an economy (McKinnon, 1973); (Denizer, Desai et al, 1988); (Gupta & Lensink, 1997). Similarly, taxing interest income on government bonds held by the non-bank private sector also has a negative effect on capital formation (Gupta & Lensink, 1997) .

(Denizer, Desai et al, 1988), examine relationships between financial restrictions and some fiscal indicators using annual data for 25 transition economies for the period 1990-1996. They claim that tax losses are associated with higher real reserve ratios in deposit-taking banks, and that positive fiscal balances are associated with higher real discount rates. These findings suggest that repressive financial controls may be adopted not to finance deficits more cheaply than would be the case under financial liberalization, but to maintain the authority and ensure the survival of those in power.

(Fry M. J., 1980) Conducts regression analysis using data for 61 developing countries for the

1964-1976 period. He argues that estimates of saving and growth functions lead to the conclusion that the cost of financial repression appears to be around half a percentage point in economic growth foregone for every one percentage point by which the real deposit rate of interest is set below its market equilibrium rate.

(Kang & Sawada, 2000), highlight the status of human capital under financial repression. They argue that a policy of repression tends to result in lower human capital investment, thus lowering the long run economic growth rate

According to (Lewis, 1992), in a repressed financial system, the government manipulates the banking sector for its seigniorage through the control of reserve requirements and regulation of deposit rates, which frequently results in a negative real return to saving. In addition, subsidized borrowing rates are offered to favored sectors or groups in the economy, distorting resource allocation and forcing those not favored to borrow at high marginal rates from the banking sector or the informal curb market.

(Fry M. J., 1988), Points toward the effects of financial repression on the country's balance of payments. He argues that repression can exacerbate the growth-inhibiting effects of foreign debt accumulation in developing countries. Financial repression may cause capital flight through over-invoicing of imports and under-invoicing of exports. The balance of payments deficit on current account rises when such capital flight increases. Such illegal capital flight can also affect domestic investment by increasing the domestic real interest rate because the financial capital in the domestic market becomes scarce.

Proponents of (McKinnon, 1973) and (Shaw, 1973) emphasizes and argue on the gains from financial deepening others highlighting benefits of financial restraint, which is proposed by (Hellman et al.1997).

(Hellman et al.1997) showed that competition can undermine prudent bank behavior. Capital requirement regulation, for instance, might result in Pareto-inefficient consequences. Better outcomes can be achieved by adding deposit rate controls as a regulatory instrument if they facilitate prudent investment. Under the assumption of incomplete information, financial restraint can be good for efficiency and growth, especially in developing countries.

(Stiglitz, 2000), attributed increasing frequency of financial crises during the past decades to financial liberalization in the developing world. It was argued that developing countries might be more able to manage money supply and financial stability under repressive financial policies (Stiglitz, 1994).

(Li D. , 2001), argued that while financial repression probably supported macroeconomic stability and economic growth during the early years, it increasingly became a burden for economic performance and, more importantly, self-sustaining in recent years in his study of the Chinese experience. He further claim that mild financial repression helped China to maintain financial stability which, in turn, had a favorable effect on growth performance.

(Huang & Wang, 2011) States, repressive financial policies should, in general, reduce economic efficiency; they might enable the authorities to better deal with problems of market failure and financial risks. They, further note that the net impact is likely determined by a combination of these two possible mechanisms—negative effect suggested by (McKinnon, 1973) and (Shaw, 1973) and positive effect highlighted by (Stiglitz, 1994) and (Hellman et al.1997, 2000). The actual result might be ambiguous, depending on which of these effects dominates.

2.6 Financial Liberalization: Views, causes and Approaches

According to (Ahmed & Islam, 2010), there are two broad groups about the possible benefits of this reform process aimed at financial liberalization: The first is the Goldsmith- McKinnon-Shaw school which argue financial liberalization is the only effective means to develop banking intermediation, to start again the capital accumulation and to promote the economic growth in the countries. (McKinnon, 1973) And (Shaw, 1973) come to present the misdeeds of financial repression and to defend the founded good of financial liberalization. The second is Keynes-Tobin-Stiglitz (also called the Structuralist and Neostructuralists School) propagated in favor of certain sort of financial repression due to economic benefits and vulnerability to persistent market failure. (Kahsay, 2014).Using various economic models, each provides background, rationale and intellectual justification for financial liberalization vis a vis financial repression. (Ahmed & Islam, 2010).

According to (Kaminsky & Schmukler, 2001), financial liberalization would be categorized into three main categories. There are domestic financial liberalization, capital account and stock market. In their analysis of financial liberalization, first, domestic financial liberalization includes interest rate liberalization (deposit interest rates, lending interest rate), credit controls (allocation of credit, and elimination of credit control), and development indirect instrument of monetary control.

“Domestic financial market liberalization is the process of designing a regulatory framework for markets that determine who gets and grants credit and at what prices—has swept the world as part of the spread of neo-liberalism over the past three decades” (Way, 2005).

In general domestic financial liberalization would be created for increasing and improving the financial institution’s operation, in term of interest rate control, credit control and so forth. Second, capital account would be accounted for long term money flow (more than one year money flow), such as, offshore borrowing by domestic financial institutions, offshore borrowing by nonfinancial corporations, multiple exchange rate markets, and controls on capital outflows. The capital account is implemented to improve and increase the participation of long term money flow, both inflow and outflow. Third, stock market liberalization would be tracked by changing in the regulations on three variables; acquisition of shares in the domestic stock market by foreigners(capital inflows), repatriation of capital (capital outflow) and repatriation of interest of dividends(capital outflow).The stock market liberalization would be set to increasing the participation of foreign investors in a country’s stock market. (Kaminsky & Schmukler, 2001),

In addition, (Mahamarn, 2010) notes that stock market liberalization would be included as a part of capital account liberalization which makes it a part of financial liberalization in order to open the market to foreign investors to trading stock in a particular country’s stock market.

There would be several factors that encourage and influence a particular country implementing financial liberalization. According to (Mahamarn, 2010) the causes of financial liberalization has been widely investigated and can be explained in two ways; first, financial liberalization is the result from either economic constraint or further development; second, financial liberalization is the result from either a domestic aspect; crisis in country, aim to upgrade standards of living and

a country's financial status, and international aspects; the aim to increase the competitive advantage in a global economy.

Generally speaking, the process of financial liberalization mostly starts from the domestic level through deregulation/removal of controls over deposit and lending rates, reducing reserve requirements, reducing entry barriers to the financial services industry, pursuing a program to stabilize price levels and generally decrease the state's involvement in the activity of financial intermediaries, and then followed by trade liberalization before shifting to external capital account liberalization and changes in the institutional framework of fiscal and monetary policies (Ahmed & Islam, 2009). Furthermore, sometimes external liberalizations concern relaxation of domestic restrictions, such as buying from abroad and in a broader view, are concerned as the foreign currency trading, also called the capital account. (Mahamarn, 2010)

The second cause for liberalization is International or domestic factors: The increasing of financial liberalization could also be seen as the consequence of either "top-down" mechanisms, also called international factors or "bottom-up" mechanisms, called domestic factors, or both of them that influence the country to reform their financial market. Top-Down mechanisms (international factors) could be implied the increasing of competition in global aspects, the pressure at international level, also called globalization, which country should adapt to the new challenge. Then, Bottom-Up mechanisms (the domestic factor) would refer not only to the economic constraint in the country but also to the reformation of domestic financial markets to improve the living standard of people in the country. (Mahamarn, 2010)

From a theoretical perspective, financial liberalization is said to benefit developing countries in a number of ways. (Levine R. , 1996) and (Claessens & Glaessner, 1998) observe that liberalizing financial markets may generate significant gains through foreign entry which increases competition and so lowers the cost of finance for domestic users, who gain easier access to cheaper funds from external sources. (Ahmed & Islam, 2010)

Additionally, (Sauve, 1999) elaborates that there are at least three main reasons as to why developing countries could benefit from financial liberalization. First, the opening up of financial markets provides more opportunities for foreign investors to invest, leading to a spillover into savings and investment, which contributes to higher growth and development in the long run.

Second, financial globalization potentially brings large benefits related to foreign firm penetration such as better technique for credit analysis, reduced risk of domestic financial instability (which in turn enhance economic growth rate and reduce poverty), and improved quality of financial and management services which can enhance productivity and efficiency. Third, liberalization can promote innovation and modernization of the domestic financial system through transfer of capital, technologies (new foreign innovation) and skilled labor (foreign expatriates), which results in improved services that lead to better quality investments.

The above view is opposed by the Keynesian-Tobin-Stiglitz school of thought (Fry M. J., 1995). This group (called neo structuralists) has brought forward a number of economic rationales to justify some sort of financial repression (such as low interest rate policies, lower inflation and directed and/or selective credit policies). Through various models (such as the Keynesian liquidity trap and Tobin's portfolio allocation models), they argue that without careful management, liberal attitudes to finance and financial market may disrupt economic activity quite seriously. (Fry M. J., 1995).

Each of these groups also nominate various monetary and financial policies in which if pursued would promote economic growth and ensure financial stability. From the earlier works of (Goldsmith, 1969); (McKinnon, 1973) and (Shaw, 1973) to recent studies, the benefits of financial liberalization have been emphasized. All these authors have pointed out that by providing higher incentives to save and allocating funds to the most productive and profitable project, financial liberalization improves productivity in the economy as a whole. Put simply, by increasing saving and enhancing the allocation of capital, financial liberalization stimulates long-run economic development. While there seems to be a general consensus on the importance and the vital contribution of a financial system to the economy, some initial studies have shown that reforms towards a more liberal economy have worked differently in Asia, Africa and Latin America (Pill & Pradhan, 1997); (Barajas, et al., 2000). (Stiglitz, 1994), has also argued that, since credit markets are prone to market failures, government intervention in the area of prudential regulation and supervision is justified, particularly due to the *de facto* role of government as an insurer of the financial system (Fry M. J., 1995)

Since the mid1980s, there is policy advice from economic think tanks and world financial institutions in favor of financial liberalization. However, (Ahmed & Islam, 2010) citing (Kose, et al, 2003); (Prasad, et al 2004); (Kose,et al, 2006) point out that financial liberalization can also lead to serious financial crisis and collapse.

2.7 Liberalization and its Impact on Interest Rates, Savings and Investment

Financial liberalization has been equated to a shift towards higher real interest rates. Higher real interest rates can increase loan able funds by attracting more household savings to bank deposits. This in turn leads to greater investment and faster economic growth (McKinnon, 1973); (Shaw, 1973). The two authors emphasized the removal of interest rate ceilings as the key measure of financial liberalization. They assumed that removal of such ceilings would increase real interest rates, which in turn would stimulate savings. The underlying assumption is that saving is responsive to interest rates. The higher saving rates would finance a higher level of investment. According to this view one should expect to see higher saving rates as well as higher levels of investment following financial liberalization (Reinhart & Tokatlidis, 2001).

(Bascom, 1994), states interest rate can be seen as the price of borrowed money, or as the opportunity cost of lending money for a specified period of time. During this period, inflation can erode the real value of financial assets and lenders want to be compensated for an expected decrease in the purchasing power of these assets. The real interest rate is thus the rate adjusted with a due compensation for the anticipated inflation. (Shrestha M. B., 2005)

The McKinnon and Shaw school of thought also hypothesizes that higher interest rates will increase the allocative efficiency of credit by shifting funds from inefficient investments to more efficient investments through organized sectors. Based on these hypotheses, the McKinnon-Shaw school argued that financial liberalization would lead to higher economic growth (Cho, 1990).

(Giovannini, 1985), studied the effects of savings on interest rates in eighteen developing countries and concluded that in the bulk of cases, the reaction of consumption growth to changes

in the real interest rate is insignificantly different from zero. It is therefore prudent to expect insignificant responses from total saving to the real interest rate.

(Bandiera *et al.*2000) examine the effects of different financial liberalization measures in eight selected countries from 1970-1994. They found that there was no evidence of positive effect of the real interest rate on saving. In most cases the relationship was negative.

(Loayza, *et al.*2000) also document that the direct effects of financial liberalization are detrimental to private saving rates. The real interest rate has a negative impact on the private saving rate. They find that a 1 per cent increase in the real interest rate reduces the private saving rate by 0.25 per cent in the short run.

(Jappelli & Pagano, 1994), investigate the role of capital markets on aggregate saving and growth. Using a panel of OECD countries for the 1960 to 1987 period, they find that financial deregulation in the 1980s has contributed to the decline in national saving and growth rates in the OECD countries.

(Bayoumi, 1993), examines the interaction between financial deregulation and household saving's behavior using eleven standard regional data for UK in the 1980s. He concluded that financial deregulation was responsible for lowering the equilibrium level of saving roughly 2.25 percent per year and making saving more dependent on changes in wealth, income and interest rates.

On the contrary, (Fry M. J., 1988) approximated a pooled time series of savings function for 14 Asian developing countries by assuming a similar hypothesis of McKinnon and Shaw framework that savings is a function of income growth. In this study it was established that real interest rates had a positive and significant effect on national savings. Also, (Schmidt-Hebbel & Serven, 2002), use data for 35 countries for the 1973-1995 period to estimate the correlation between financial liberalization and savings. They find a positive, significant relationship between financial reform and saving. A higher degree of financial liberalization is observed in countries that on average save more, although simple association does not reveal anything about the direction of causality. Likewise a more recent study by (Serieux, 2008) of 19 African countries proves that there is a high correlation between savings and interest rates for the sub Saharan countries studied for the period between 1965 and 2003.

A study of Latin American and Asian countries by (Gupta K. , 1987) to address the topical issue of aggregate savings determined by interest rates through financial intermediation. Financial repressionists of the McKinnon and Shaw framework claim that the positive substitution effect dominates the negative income effect in developing countries. On the other hand, the financial structuralist's contend that financial intermediation directly affects savings which is set apart from the effect of interest rates. As such Gupta found that there was no overwhelming empirical support for either of the two schools of thought. In Asia, there is some support for both, but for Latin America, neither of the two hypotheses receives any support. However, it is noteworthy that in this study that both groups had a positive sign, which adds weight to the McKinnon and Shaw's framework postulations that increased interest rates, would lead to a rise in the savings rate.

The relationship between interest rates and savings is not written in stone. As such other researchers have countered this neo-classical economics notion and the McKinnon and Shaw framework of a positive and causal relationship between savings and interest rates. (Mikessell & Zinser, 1973), showed that interest rates did not affect the propensity to save. However, interest rates were important in ascertaining which channels that saving would follow. This notion is also supported by (Serieux, 2008). (Warman & Thirlwall, 1994), in their survey of Mexico for the period stretching from 1960-1990 also found that interest rates had a positive effect on financial savings but a negative outcome on aggregate savings.

McKinnon and Shaw framework postulates that in a financially repressed market, the sub-equilibrium interest rates result in a shortage of funds in the market. Governments aim to bridge this gap by using credit rationing programs aimed at selectively rationing available credit to projects that are deemed to proffer the highest returns to society. However, some researchers argue that credit rationing will lead to inefficient rationing of credit as the projects that receive funding may not be necessarily the most profitable. (Shrestha M. B., 2005)

(Reinhart & Tokatlidis, 2001), use data from 50 countries consisting of 14 developed and 36 developing ones. Their data spans over the 1970-1998 period. Based on their findings, they argue that with greater certainty, financial liberalization appears to deliver higher real interest rates, lower investment, but not lower growth. They find that, in some regions savings

increased following financial sector reforms; but in the majority of cases, savings declined following the reforms

(Fry M. J., 1980), established a positive link between credit and the interest rate and between investment and credit availability. Moreover, in studies done for Mexico for the period 1960-90, it was found that investment is positively linked to the supply of credit from the banking system but found the net effect of interest rates on investment to be negative (Warman & Thirlwall, 1994). On the other hand there are researchers that established negative relationships between credit availability and interest rates (Greene & Villanueva, 1991); (Demetriades & Devereux, 1992) and (Gibson & Tsakalatos, 1994). More specifically, (Greene & Villanueva, 1991) studied 23 countries, among them, developing countries such as Mexico, Sri Lanka, Venezuela and Zimbabwe. They used a pooled time-series, cross-sectional approach. Econometric analysis of this study evidenced that the rate of private investment is significantly and positively linked with GDP growth, and the rate of public sector investment, and negatively related to real interest rates. Similarly; (Demetriades & Devereux, 1992) used a sample of 63 countries during the period 1960-1990. They found that higher domestic interest rates had a significant and negative effect on investment. As such, from these studies and the empirical validity vested in them, it can be argued that financial liberalization has an adverse effect on the level of investment.

It is important to note that in financial liberalization it is not enough to attract investments without evaluating the efficiency of those investments. (Bonfiglioli A. , 2005), assesses the impacts of financial liberalization and their effects through separate channels i.e.: income growth: capital accumulation and productivity. This study involved a sample of 93 countries surveyed over the period 1975 to 1999. The empirical evidence suggested that financial liberalization has a modest effect on capital accumulation yet a significant positive effect on total factor productivity through financial deepening.

(Ghosh, *et al* .1999) highlights through the theory of micro lending institutions in order to attain optimal results i.e.: restraining default risks dictate limits on repayment burdens. Such can be attained by limiting loan sizes below what borrowers' request. The phenomenon of micro-credit rationing prevents interest rates from rising to excessively high levels. This assertion shows that there are merits to both financial repression and liberalization. As (Ghosh, *et al* .1999) impress

upon the fact that high interest rates may help to counter adverse selection and avail more formal credit as espoused in the financial liberalization literature. However, elements of repression are also important i.e.; in terms of regulations that entrants must abide by in term of protective controls.

2.8 Effect of Reserve requirement on Credit Availability

Financial liberalization among many of the measures it also entails relaxation of high reserve requirements. High reserve ratio ensures a ready demand for government securities that help to finance government deficits at ceiling interest rates. Monetary expansion connected with government financing its deficit by borrowing from the central bank contributes to inflationary pressures, or increased inflation tax (Bascom, 1994)

(Weiner, 1992), suggested that countries should focus their monetary policy on interest rate control. Central banks should make controlling market interest rates the main short-term goal of monetary policy, but their long-term target should be money supply control. Therefore, the required reserves policy is not only a direct tool for money supply control, but it is also a convenient tool for short-term market interest rate control. (Richard & Kenneth, 1983), studied RRR changes on the money supply in the short term and concluded that the adjustment of the RRR affects the expected value and supply of money.

On contrary, (Cui & Liu, 2009) researched the mechanism of action of the required reserves system on the basis of the endogenous money supply theory and analyzed the gap between the actual effect of 19 increases of the legal required reserves made by the Peoples Bank of China from 2006 to June 2008 and the expected goal of regulation and control. They concluded that there is no causal relationship among China's required reserves, loan scale, and money supply.

(Li Z. , 2008), analyzed the main causes of increases in the RRR since 2004 and the problems that exist in using the required reserves policy. He concluded that simply increasing required reserves is not sufficient to solve the structural problems of China's economic development.

According to (Shrestha M. B., 2005) the relaxation of reserve requirements leads to an increase in the loan volumes to private entrepreneurs from the banking sector since part of the reserve maintained by the banks to meet the reserve ratio can be used for lending.

Removal of credit ceilings as well as relaxing other controls like direction of credit to the particular sector enables the banking sector to evaluate the projects and extend loans to the high yielding ones. Financial constraints of households and firms are eliminated with the removal of credit controls. A higher real interest rate leads to channeling of funds from informal markets to the formal banking system.

(Tobin & Brainard, 1963), affirms the effect of reserve requirements on their analysis of the relationship between the required reserves system and the ability of commercial banks to create money, but they did not directly emphasize the importance of the required reserves system during the act of money creation by commercial banks. They concluded that money creation by commercial banks was restricted by the principle of the margin benefit equal to the margin cost. Commercial banks only acted as risk-neutral portfolio managers in the process of creating money, and the required reserves system only worked indirectly through use of the cost-benefit principle. (Luo, 2010), analyzed the effects of China's required reserves policy during the period of 2006-2008 and concluded that the increase in the required reserves has had a direct impact on the excess reserve fund and monetary base. However, the money supply, monetary multipliers, and interest rates are strongly influenced by financial institutions and other economic entities; thus, the impact of an increase in the required reserves is not in complete agreement with the theoretical model.

The McKinnon-Shaw school believes that financial liberalization increases the total credit available to the private sector through various channels reserve requirement being one of them. In contrast, the neo-structuralists argue that financial liberalization reduces the total supply of credit to the businesses. They claim that due to the reserve requirement in the banking system, entire funds channeled from curb market to formal banking system cannot be loaned out (Van Wijnbergen, 1982); (Van Wijnbergen, 1983); (Buffie, 1984). (Cho, 1990), disputes the view of the neo-structuralists by arguing that not only banks, but also the informal credit markets have to hold some reserve funds if they provide intermediation, i.e., lending through collecting deposits, similar to that of banks. This view clearly suggests that the total credit supply does not decrease due to reserve requirements in the banking system.

2.9 The Role of Securities market on Growth

Securities market development is another important dimension of financial liberalization. As liberalization proceeds, banks cease to dominate the entire financial system. Securities markets emerge and become an increasingly important source of funds for many firms. Since the late 1980s, many emerging market countries have amended their laws to allow foreigners to legally invest in their equity markets. As a result, foreign portfolio investment into emerging markets increased dramatically. The foreign inflow of capital also helped spark a boom in emerging securities prices, (Kawakatsu & Morey, 1999); (Henry P. B., 2000) and (Shrestha M. B., 2005).

Financial liberalization would increase the economic output and financial market growth in a particular country. History shows the success of financial liberalization with higher growth rates in either economic growth or stock market growth. Keynesian theories demonstrate that total output is derived from total spending on consumption (C), investment (I), government expenditure (G), and net export (X-M). This lead to this equation:

“GDP (gross domestic product) =C (consumption) +I (investment) + G (government expenditure) + X (Export)-M (import)”

As the Keynesian's view, financial liberalization may increase the total market growth with higher relaxation of the market increasing investment - mainly foreign investment – government expenditure, consumer expenditure and exports. In general, financial liberalization would mainly aim to increase investment, and once investment has increased consumption would increase (due to higher wages and cash flow in the economic system). Similarly, exports and imports would be higher since the relaxation and cancellation of trading and capital control. All of these may lead to increasing of gross domestic output and in to a lesser aspect, the financial market growth. In additional, several theorists of financial liberalization say that financial liberalization would increase saving and investment in countries in terms of higher growth. Therefore, financial market liberalization would lead to a positive impact on both macroeconomic and stock markets, for instance, GDP growth, higher employment and stock market growth. (Mahamarn, 2010)

According to Keynesian theory financial liberalization would increase economic output via increasing investment, consumption and national savings. As the overall financial liberalization, many countries have shown rapid extension of consumer credit after liberalization, for instance, (Way, 2005), suggests in his study that in the 1980s the United Kingdom and Sweden financial liberalization led to consumption booms with more available credit. Moreover, in his study, he argues consumption booms are of even greater potential importance in developing countries. According to the study of (Siamwalla, 2000), in Asian countries, such as; Thailand, Indonesia, Malaysia and South Korea experienced high economic growth after financial liberalization as a result of increased capital inflows (through global relocation of capital), exports diversification and foreign investments (Ahmed & Islam, 2009).

Financial liberalization is also believed to be one of the main drivers of stock market growth, because the lower barrier of investment in stock market may lead to higher investment and subsequent market growth. For instance, according to International Finance Corporation (IFC) data issued in 1993, market capitalization of developed countries rose relative to GDP between 1983 and 1992 from 2% to 10% of the global total after they liberalized their stock markets (Singh, 1997). And, for the evidence of 18 developing countries between 1981 and 2000 have shown that stock market liberalizations have a significant impact on the real growth rate of economic indicators, such as: real wages, growth rate of employees, and growth rate of number of new company (Tong, 2005). (Henry P. B., 2000), studies the two significant empirical implications of liberalization in 12 emerging countries in the late 1980s and early 1990s and points out that the first stock market liberalization would increase physical investment following stock investment. In addition, he also suggests that stock market liberalization can reduce the aggregate cost of equity capital and increase the country's equity price index.

In other words, financial liberalization, especially stock market liberalization, once it was implemented may increase foreign investment and then can lead to higher growth in stock markets followed by physical investment in a particular country, because of the lower cost of equity that means the higher of expected return on investment. This view is supported by (Edwards, et al, 2003) who writes financial liberalization in stock markets and concludes that stock markets increased significantly overtime, especially in Latin American countries (Edwards, et al, 2003). Hence, it could conceivably be hypothesized that financial liberalization possibly

increases the total economic growth and possibly increases the total stock market growth with higher consumption, investment and saving. (Mahamarn, 2010)

Meanwhile, opponents of financial liberalization hold the view that foreign investments toward emerging markets are extremely volatile and depend on changing economic conditions. A consequence of volatile investment flows is a high volatility in stock prices. The empirical implication is that market volatility should increase after liberalization. In contrast, (Domowitz , *et al.*1998) show that liberalization may induce greater participation by foreign investors, whose entry can reduce price volatility. New investors broaden the market, which in turn dampens the shocks on prices from order transactions. Foreign investors may also make prices more efficient by increasing the accuracy of public information regarding fundamental values (De Santis & Imrohorglu, 1997).

(Levine & Zervos, 1998), studied the empirical relationship between various measures of stock market development, banking development, and long run economic growth. They find that, even after controlling many factors associated with growth, stock market liquidity and banking development are both positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation, and productivity growth. Their findings suggest that banks provided different financial services from those provided by stock markets.

2.10 Liberalization of the External Account

According to (Bascom, 1994) External financial reform policies are concerned mainly with current and capital account convertibility, While Current account convertibility permits the free exchange of a country's currency for foreign currencies to finance international transactions in goods, services, and unrequited transfers, the Capital account convertibility refers to the removal of controls on capital movements, or the opening of the capital account of the balance of payments.

The capital account, officially known as capital and financial account, in a country's balance of payments covers a variety of financial flows, mainly foreign direct investment (FDI), portfolio investment (including investment in equity and debt securities), and loans, which have in common the acquisition of assets in one country by residents of another. Capital outflows

include residents' purchases of foreign assets and repayment of foreign loans, whereas capital inflows associate with non-residents' investments in home-country, and property and loans to home-country residents. It is possible, in principle, to control these flows by placing restrictions on those flows going through official channels in order to shield the country from risks associated with fluctuations in international capital flows. Capital account liberalization refers to easing such restrictions that allows capital to flow more freely in or out of a country (Prasad, et al, 2003); (Eichengreen,et al, 1999).

In more details, (Suttacheep, 2008) categorized the capital account in a country's balance of payments is into four sources of capital; (1) Direct investment (2) Portfolio investment (3) Financial derivatives, and (4) Other investment. Direct investment includes equity capital, reinvested earnings, and financial derivatives associated with various intercompany transactions between affiliated enterprises. Excluded are flows of direct investment capital into the country for exceptional financing, such as debt-for-equity swaps. Portfolio investment includes transactions with nonresidents in financial securities of any maturity other than those included in direct investment, exceptional financing, and reserve assets². As components of portfolio investment, equity securities include shares, stocks, and similar documents that usually denote ownership of equity, and debt securities cover bonds, debentures, notes and money market or negotiable debt instruments. Financial derivatives that cover financial instruments linked to other specific financial instruments or commodities, and through which specific financial risks (such as interest rate risk, foreign exchange risk, equity and commodity price risks, credit risk, etc.) can, in their own right, be traded in financial markets. Other investment that shows on the capital account includes all financial transactions not covered in direct investment, portfolio investment, financial derivatives, or reserve assets. Major categories are transactions in currency and deposits, loans (mainly bank borrowing), and trade credits. Capital inflows are the sum of the transactions of capital mentioned above that flow into a country, and capital outflows are those of capital that flow out of a country. (Suttacheep, 2008)

²Reserve assets consists of external assets readily available to and controlled by monetary authorities primarily for direct financing of payments imbalances and for indirect regulating of the magnitude of such imbalances through exchange market intervention. Reserve assets comprise monetary gold, special drawing rights, reserve position in the IMF, foreign exchange assets (consisting of currency and deposits and securities), and other claims (IFS, 2006).

In the late 1980s and early 1990s a number of developing countries liberalized their capital accounts for the first time and a number of studies found a significant positive effect of capital account liberalization on economic growth. (Henry P. B., 2003) found that free flows of capital enhances growth through the reduction of the cost of capital and thus the increase in investment, while (Klein & Olivei, 2005) suggest that capital account liberalization enhances growth through the channel of financial development or financial depth. Empirical studies of (Quinn, 1997) and (Edwards S. , 2001),found a significant increase in the growth rate of income per capita as a result of capital account liberalization in approximately 60 countries over the period 1960-1989. It was also found by (Bekaert, Harvey, & Lundblad, 2001) that during 1981 and 1997 stock market liberalization in 30 emerging markets significantly contributes to growth in income per capita with largest effects shortly after liberalization. More recently, the study of (Mendoza,et al, 2007) provides the result that middle-income countries benefit significantly from capital account openness while growth among poorer countries may not be promoted by capital account liberalization. Besides, the response of growth to open capital accounts depends upon the level of income or the quality of government. The findings of (Klein M. W., 2007) added that the positive effect of capital account openness on long-run economic growth is consistent with a situation where growth in a capital-scarce country with good institutions is spurred by access to world capital markets, while this effect is not present either if a country is relatively capital abundant or if it lacks the institutions or regulations required for capital inflows to be directed to their most productive uses. Contrarily, (Grilli & Milesi-Ferretti, 1995) , (Rodrik, 1998) and (Kraay, 1998) found no significant impact of capital account liberalization on growth in 60-100 countries over the period 1971-1997.

(Henry P. , 2007), develops a neoclassical growth model to show the theoretical effect of liberalization. He concludes that it is not surprising to find no permanent positive effect of the liberalization of capital markets on growth. However, he finds indeed a transient positive effect, which increases the living standards permanently. Indeed, the opening can be a source of instability, hence the need to develop new types of contracts.

Recently, (Henry & Sasson, 2008),show that following the stock market openness of developing countries to the flow of foreign capital, the rate of average annual growth of real wages in

manufacturing increased permanently. Therefore the pre-liberalization period has seen an increased growth rate of labor productivity.

(Penler & Tanku, 2008), employ a model of variable coefficients in time in accordance with the coefficients of saving-retention model of Feldstein-Horioka, insofar as such coefficients measure the international mobility of capital. The empirical results suggest that the hypothesis of the stability of these coefficients is strongly rejected. On the one hand, the capital was perfectly mobile in a great period in Canada. On the other hand, capital mobility has never been high in the United States. The capital was more mobile in Japan and the United Kingdom in the late 20th century than in the period during and after the war. While in Argentina, Italy and Sweden it rose in the years around 1970. This diversification among countries allows us to draw the conclusion that the international mobility of capital for most countries was not considered monotonically increased during and after the war.

(Gruben & McLeod, 2002), on their study of over 100 countries that suggests a strong link between capital account openness and lower inflation. They argue that full capital account liberalization is associated with a 3-6 percent fall in average inflation rates. They use the data for 112 countries for the 1973-1989 periods.

(Hervé, 2008), by supporting the reforms of labor markets on OECD countries, confirms that the capital mobility without restriction reduces the rigidity of labor market and triggers a redistribution of resources. The regulation of labor market tends to sectorial specialization as well as enhancing the quality of hands and the positive rate of job creation. These results are corroborated by (Leite-Monteir & Lloyd-Braga, 2009) through a study on the effect of international capital markets integration in a world where countries differ in their institutions of work market: Countries that have a labor market perfectly competitive while the other is unionized. These authors show that the workers affected by capital mobility would encourage self-sufficiency in the unionized country, and the contrary to the nonunionized one. They also show that, under capital mobility, an increase in the relative bargaining power of unions does not always improve the welfare of workers.

(Bekaert, et al, 2011), study the bond between financial liberalization (capital account and equity market) and the growth in two components, growth of authorized capital and growth of the total

factor productivity. The econometric estimates of a Probit-panel of 71 countries between 1980 and 2006 by the OLS by using a rough measurement of capital account liberalization of Quinn reveal that the financial opening affects all the two channels positively but has a greater impact on the productivity of factor than the investment.

2.11 The Role of Liberalization in Allocative Efficiency

The benefits of financial liberalization for economic growth have been based on two broad hypotheses (McKinnon, 1973); (Shaw, 1973).The first holds that low interest rate ceilings suppress the savings rate, thus reducing the availability of loanable funds and investments, and in turn lowering the growth rate. The second hypothesis argues that low interest rate ceilings and repressed financial system result in poor allocative efficiency of credit. Higher interest rates and reduced government interventions in the financial sector, in contrast, will raise allocative efficiency as well as savings. The idea of financial liberalization has become today's new orthodoxy in the academic world as well as among the major international institutions that offer policy advice to developing countries. (Cho, 1988)

(Cho, 1988)for the case of Korea and by (Galindo,et al, 2002) for several developing countries suggests that financial liberalization has been associated with a substantial improvement in the efficiency of credit allocation in these countries, allocative efficiency (Laeven, 2003) However note allocative efficiency is intrinsically hard to measure.

(Bonfiglioli A. , 2011); (Bekaert,et al, 2011) and (Kose,et al, 2009) find that financial liberalization increases aggregate total factor of production. (Gupta & Yuan, 2009) and (Levchenko, et al, 2009) find that more financially constrained sectors grow more following liberalization than less financially constrained sectors.

Using firm-level data, (Galindo,et al, 2007) construct an index of investment efficiency and find that liberalization improves the allocation of investment for most of the 12 countries in their sample. (Abiad,et al, 2008), provide similar evidence for such an allocative efficiency effect by comparing the dispersion of Tobin's q among listed firms in five emerging markets before and after financial liberalization.

In contrary, the neostructuralists claim that the official banking sector is less efficient than

the financial markets outside of it, such as informal credit markets in intermediating financial resources. They argue that informal credit markets provide complete intermediation, while banks are absorbing some funds for reserve requirements. (Van Wijnbergen, 1983); (Buffie, 1984).

However, (Cho, 1990) challenges the claim of the neostructuralists by arguing that the efficiency of credit allocation by informal credit markets is limited by their narrower information base. The customers of specific lenders in informal credit markets are usually limited to a small group of borrowers whose credibility is determined by their location and by private information networks. These characteristics of informal credit markets limit their capacity to allocate credit efficiently. Informal credit markets also fail, like repressed banks, to identify productive borrowers well and to finance lumpy investments that can exploit economies of scale. Furthermore, as the degree of risk pooling is limited, and their loans are poorly protected, the interest rate of informal credit markets is usually extremely high, which reflects a high-risk premium. Since a low interest rate leads to an inefficient allocation of credit, the extremely high interest rate, which may far exceed the productivity of borrowers, also leads to inefficient allocation. In light of these factors, it seems obvious that the banking sector can allocate credit more efficiently if the interest rate ceilings are eliminated, or if ceilings are increased to reflect market conditions (Cho, 1990)

(Gupta & Lensink, 1996), examine the effects of financial liberalization on allocative efficiency. The allocative efficiency is assumed to be affected if deregulation leads to a reallocation of a given amount of investments between the two sectors. It is argued that higher interest rates would induce the selection of projects with higher rates of return, thus raising the average productivity of investment, and hence growth, even if the effect on savings was negligible.

(King & Levine, 1993b), argue that a more developed financial system fosters productivity improvements by choosing higher quality entrepreneurs and projects, by more effectively mobilizing external financing for these entrepreneurs, by providing superior vehicles for diversifying the risk of innovative activities, and by revealing more accurately the potentially large profits associated with the uncertain business of innovation. In these ways, better

financial systems stimulate economic growth by accelerating the rate of productivity enhancement.

2.12 Financial Intermediation

(McKinnon, 1973) and (Shaw, 1973) argued that the financial sectors of most developing economies were repressed by misguided financial and monetary policies, overregulation of the financial sector and other forms of public sector intervention, and excessive public borrowing from the financial system. (Serieux, 2008) Stated the consequences of this repression may perhaps be seen in:

- Administered low nominal interest rates, often resulting in negative real rates;
- Low ratios of real money to national income;
- Small and oligopolistic financial sectors (relative to the size of the economy) dominated by intermediation in short-term financial assets;
- Dual economies with capital-intensive modern sectors served by cheap foreign exchange and low-interest finance and labor-intensive traditional sectors left to be served by informal finance;
- Large government deficits that pre-empted the resources of the formal financial sector and generated inflation (by inducing excess money creation).

The outcome of that repression was low savings and investment rates and retarded growth.

(McKinnon, 1973) and (Shaw, 1973) argued for the ills of the repression liberalizing the financial sector would enable an economy to more efficiently and extensively intermediate between savers and investors. However, at both the theoretical and empirical levels, they described slightly different means through which improved financial sector performance would have real economic effects. (Serieux, 2008)

Furthermore (Shaw, 1973), claim that increased financial intermediation provided the impetus for growth more directly. Liberalization would result in an expanded, improved and integrated financial sector that would lead to:

- **An increase in the savings rate** from the diversion of potential savings from inflation hedges, capital flight and the like;
- **An increase in the rate of investment** by facilitating more lumpy investment; and
- **A direct enhancement to growth** via improved financial technologies.

These growth-inducing consequences of increased monetization and financial sector intermediation are referred to as Shaw's 'intermediation' effect. (Serieux, 2008)

According to (Shrestha M. B., 2005), citing (King & Levine, 1993a); (Beck, et al, 2000) underline financial development is commonly the prerequisite for increased financial intermediation. Financial liberalization is thought to be associated with increased financial development that reduces the imperfections of financial markets, resulting in a reduction in the cost of capital and an increase in the level of investment. Increased financial development in turn has been shown to enhance economic growth.

(Rajan & Zingales, 1998), shows that financial development should positively affect industries which are more capital constrained. They investigate whether sectors which are more dependent on finance grow faster in countries with higher financial development. They find that this is indeed the case, which then can result in higher economic growth. The reason for this effect is that external finance becomes cheaper for firms in countries with a higher degree of financial development.

(Laeven, 2003), used panel data on a large number of firms in 13 developing countries to find out whether financial liberalization relaxes financing constraints of firms. He found that liberalization affects small and large firms differently. Small firms are financially constrained before the start of the liberalization process, but become less so after liberalization. Financing constraints of large firms, however, are low before financial liberalization, but become higher as financial liberalization proceeds. He concluded that financial liberalization has adverse effects on the financing constraints of large firms, because these firms had better access to preferential directed credit during the period before financial liberalization. Similarly, (Beck, et al, 2008), conduct a research, which concludes that small companies benefit more from a highly developed financial system than mature firms do.

(Laeven, 2003), document that the liberalization of the banking sector reduces the imperfections firms face when dealing with financial markets. Equity market liberalization directly reduces financing constraints in the sense that more foreign capital becomes available. Foreign investors may insist on better corporate governance, which helps reduce the wedge between internal finance and external finance. Hence, the cost of capital may go down because of improved risk sharing and the reduction in financing constraints (Bekaert, et al, 2001)

(Schmidt-Hebbel & Serven, 2002), Point out that financial reform could lead to better financial intermediation and raise the level or efficiency (or both) of investment, thus spurring growth. Financial liberalization grants market forces a dominant role in setting financial asset prices and returns, allocating credit, and developing a wider array of financial instruments and intermediaries. All these changes are aimed at improving the efficiency of financial intermediation, (possibly) raising saving and investment, improving the efficiency of investment, and spurring growth. Financial development can imply an increase not only in the availability of credit funds and instruments, but also in saving instruments and devices. A deeper financial system should be capable of providing alternative saving instruments that more adequately match individual preferences, risk-aversion and income profiles. Credibility in the soundness and sustainability of banks, for example, should increase the incentives for households to participate in the financial system.

The widening size of the financial system is another feature that is evident in financial liberalization following the reform new banks and financial institutions enter into the system as well as rapid branch extensions take place. (Fry M. J., 1988), notes ~~the~~ small amount of empirical evidence on branch proximity suggests that increased branch proximity has raised national saving ratios substantially (by 1 to 5 percentage points over a 20 year period) in six Asian developing countries.

The change to liberalization is expected to lead to financial deepening as a result of increase in the volume of funds handled by the financial institutions in aggregate. Besides, an increase in the number and varieties of financial institutions also increases the array of financial instruments available, and promotes the designing of new financial instruments. This stimulates the use of more financial instruments of savings by investors relative to non-financial instruments while

reducing liquidity risk and eventually increasing the flow of funds into activities of higher productivity. (Ahmed & Islam, 2010)

(Bumann, et al, 2013), state deepening of financial markets enhances efficiency of transforming savings into investments and economic profitability of countries, reduces the financial and economic crises in national and international contexts and also heighten the official governmental policies through deregulating credits, restrains interest rate, eliminating entry barriers for foreign financial institutions and privatization of banking sector. As well as strengths the price mechanisms as well as improving market competition that increases the interest rate on deposits translating the higher saving rate and more resources available for investment purposes.

On contrary (Stiglitz & Weiss, 1981); (Stiglitz, 2000) Argue that financial deepening does not solved the problem of asymmetric information that restrains the financial markets to be efficient, even without governmental interventions. Likewise (Boot, 2000) claim financial deepening and increased competition may reduce the relationship lending that destroys the information capital that increases the asymmetric information. Increased competition in financial markets may reduce the profit margin and increased financial fragility of banks. Reduction in profit margins may encourage banks to economize on monitoring efforts while making loans. Thus, financial deepening may create financial crises if an excessive risk is taken in presence of increased competition (Hellmann, et al, 2000); (Demirgüç-Kunt & Detragiache, 1998)

(Pill & Pradhan, 1997), claim that by following financial liberalization, market determination of interest rates should result in modestly positive real interest rates. These, in turn, will increase the resources available to the financial system, since bank deposits offering a competitive return will attract savings that were previously held outside the formal financial sector. Moreover, positive real interest rates will provide an incentive for borrowers to invest in more productive activities, thereby improving the productivity of the economy as a whole. Consequently, financial liberalization should lead to an increase in both the quantity and the quality of financial intermediation by the banking system.

(Pill & Pradhan, 1997) However Point out for financial liberalization to be successful there are 3 necessary prerequisites: (1) Macroeconomic stability is essential for successful liberalization.

Macroeconomic imbalances such as balance of payment and fiscal deficit should be brought to a manageable level and inflation lowered. (2) A 'well behaved' financial system is required along with macroeconomic stability. Sound banking practices are important and practices such as credit rationing, government intervention and directed allocation should be abolished. (3) Since financial liberalization is implemented within a general framework of complex interrelated institutions, the need to strengthen institutional functioning in the financial system before liberalization is high. Specifically, the legal, accounting, supervisory and management infrastructure should be strong. (Ahmed & Islam, 2010)

Hence the success and failure of financial liberalization Program depend on the proper sequencing of the liberalization process. In the following section this aspect of liberalization will be discussed.

2.13 Sequencing of the financial liberalization

Financial liberalization has shown outcomes which various authors stress the importance of the sequencing of liberalization Program is a vital component for any policy measure undertaken by a given country. The idea of prerequisites for liberalization and the need to pay attention to sequencing derives from the notion that adjustment does not take place at the same speed in all the markets. For example it is slower in the goods markets than in the financial markets. Consequently, the simultaneous liberalization of the financial sector and other markets is bound to generate some problems and possible conflicts among policy measures. (Magumhise Nyawata, 2001). According to (Patabendige & Senarath, 2014) the optimum sequencing Process is an ideal to assess the proper stages are stated by (Edwards & Van-Wijnbergen, 1983); (Edwards S. , 1989); (McKinnon, 1989); (Mckinnon, 1991) ; (Krueger, 1984) having four sequencing steps. The first one stressed on the domestic real liberalization, followed by domestic financial liberalization, Succeeded by liberalization of foreign trade, and the last step perhaps is capital movement as described in table 2.1 below.

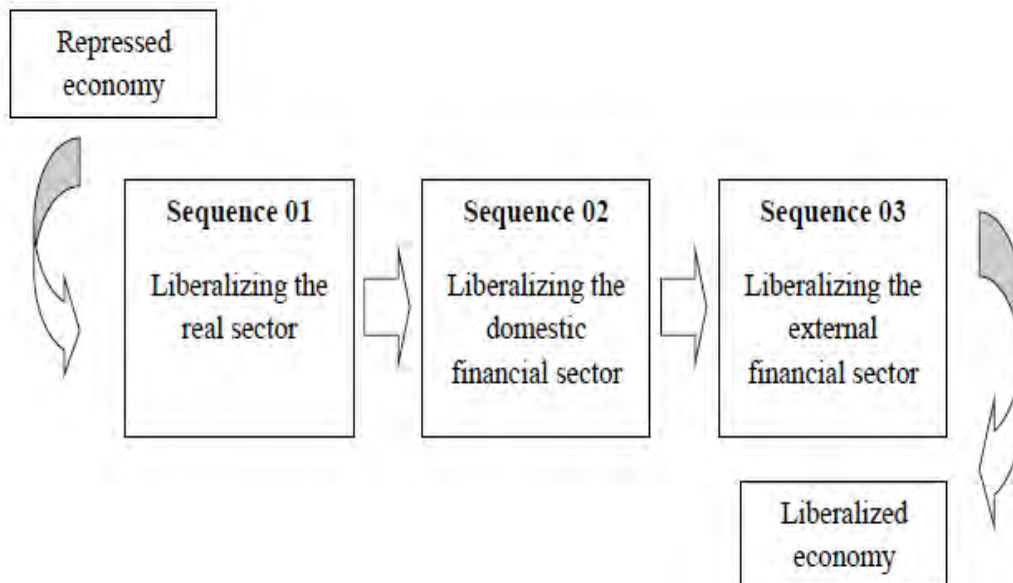
Table 1 Optimal Sequence of Liberalization

Sector	Domestic	External
Real	01.	03.
	<ul style="list-style-type: none"> - fiscal discipline (stability) - elimination of implicit and explicit taxes and subsidies - privatization 	<ul style="list-style-type: none"> - liberalization of current transactions - creation of foreign currency exchange market and currency convertibility
Financial	02.	04.
	<ul style="list-style-type: none"> - restructuring/privatization of the domestic bank system - creation/reactivation of the money market 	<ul style="list-style-type: none"> - control elimination on capital movement - total currency convertibility

Source: Mokhtar and Fatemah (2007)

Based on the Above Sequence (Patabendige & Senarath, 2014) portray the sequencing of liberalization pictorially as follows:

Figure 1: Sequence of liberalization



Source: (Patabendige & Senarath, 2014)

Further vindicated by (Patabendige & Senarath, 2014) sequences highlighted by (Mokhtar & Fatemah, 2007), they cite (Edwards S. , 1989) quoting the comments of (Frankel, 1982) states that goods and asset markets clear at different speeds. While asset markets clear almost instantaneously, the attainment of equilibrium in the goods market usually takes some time. Thus, Frankel argued, a synchronization of the structural reform process will call for the goods markets (i.e., the current account) to be liberalized before the capital account.

(Mckinnon, 1991) sighting the infamous ‘southern cone’ experience states that trade liberalization should only take place after the fiscal deficit is eliminated, emphasizing that government will face no need to borrow from abroad to finance (which leads to the over-borrowing syndrome) its expenditure and, thus, the need for capital inflows during the transition will be minimum. (Mckinnon, 1991), also states that second in order should be to get the domestic financial markets in line with the McKinnon-Shaw hypothesis (as stated under the literature review). (Mckinnon, 1991) And (Edwards S. , 1989) states that financial liberalization will result in capital inflow, and it will result in a real exchange rate appreciation which, in turn, protects the tradable sector. It is argued that in order to ensure success of the trade reforms, it is crucial to avoid real exchange rate overvaluation; hence opening up external financial sector should be the last in an optimal sequence of liberalization. (Patabendige & Senarath, 2014)

(Kaminsky & Schmukler, 2003) Note the pattern of liberalization differs across regions, with developed countries liberalizing their stock markets first and developing economies opening their domestic financial sector first. They argue that liberalization unveils new problems in the banking system as protected domestic banks suddenly get access to new sources of funding triggering protracted financial booms. During financial repression, banks are protected from outside competition, badly regulated, and badly supervised and do not have the pressure to run efficiently. In such scenarios, a standard recommendation on sequencing is to first clean up domestic financial institutions and change government institutions, then deregulate the industry and open up the capital account.

(Schmidt-Hebbel & Servén, 2002), stated excessively rapid financial reform lead to risk of unsustainable credit and activity booms, which then lead to financial crises and the absence of prudential regulation and strong supervision of banks and other liberalized capital market

segments escalate it. Likewise (Ahmed & Islam, 2010), further argue since financial liberalization is implemented within a general framework of complex interrelated institutions, the need to strengthen institutional functioning in the financial system before liberalization is high. Specifically, the legal, accounting, supervisory and management infrastructure should be strong. It is indicated that such institutions are underdeveloped, highly fragile or non-existent in Africa. Therefore, empirical result shows that the general environment for financial liberalization was far less favorable in Africa than in Asia.

(Shrestha M. B., 2005), quoting (Girma, 2003) note the devastating effect of premature liberalization of the financial sector on national economy, as is evidenced by the financial crisis in East Asian countries. (Girma, 2003), argue gradual and cautious move towards liberalizing the financial sector in developing countries is not a choice but a necessity.

(Mehran & Laurens, 1997), assert that the speed of liberalization needs to be determined in the context of a country's overall reform program. Financial sector reforms need to be supported by structural reforms in other economic sectors. Countries with serious macroeconomic and financial imbalances, or inadequate regulatory and supervisory frameworks, or whose financial institutions are insolvent, are likely to run into serious problems if they liberalize interest rates too early or too rapidly. If liberalization is premature, controls on interest rates may need to be reintroduced. Thus, the better the fundamentals, the faster a country can go with interest rate reform. (Mehran & Laurens, 1997) Further claim similarly as rapid liberalization poses certain dangers too slow a pace can also defeat reform programs. Reforms may lose momentum and new distortions could emerge if liberalization takes too long. In determining the appropriate sequencing of interest rate liberalization, the authorities need to distinguish not only between loan and deposit transactions, but also between wholesale and retail transactions. Interest rates on wholesale transactions between sophisticated entities should be liberalized first, followed by lending rates and, lastly, deposit rates. This gradual approach safeguards the profitability of banks while allowing time for people and firms to adjust to liberalization.

(Pill & Pradhan, 1997), undertook a comparative study on financial liberalization in Africa and Asia. Looking at the experience of liberalization in both continents they give an analysis as to why the outcomes differed. Using a financial deepening indicator (ratio of broad money to

national income) the study shows that liberalization seems to have been much more successful in Asia than in Africa. They elaborate that for financial reforms to succeed there are three necessary prerequisites. The first is macroeconomic stability is essential for successful liberalization. Macroeconomic imbalances such as balance of payment and fiscal deficit should be brought to a manageable level and inflation lowered. They observed that in Asian countries where the above conditions were not adhered to (the Philippines and Sri-Lanka for example) reforms were not successful. Most African countries which attempted to liberalize did so in an environment with excessive levels of inflation (some having triple digit, for example Zambia) and large fiscal deficits. Second, a 'well behaved' financial system is required along with macroeconomic stability. Sound banking practices are important and practices such as credit rationing, government intervention and directed allocation should be abolished. They state that banks in many African countries are largely public owned and hence are still accessible to the government, while those privatized depend on subsidies for survival because of the large stock of non-performing loans inherited from the directed lending program. Thus for successful liberalization, there is a need for restructuring banks to remove bad debts, privatizing public owned banks and creating a conducive environment to promote competition in the banking sector. (Pill & Pradhan, 1997), observe that several Asian countries who implemented such structural reforms had greater success in liberalizing their economies. Third, since financial liberalization is implemented within a general framework of complex interrelated institutions, the need to strengthen institutional functioning in the financial system before liberalization is high. Specifically, the legal, accounting, supervisory and management infrastructure should be strong. It is indicated that such institutions are underdeveloped, highly fragile or non-existent in Africa. Therefore, this analysis shows that the general environment for financial liberalization was far less favorable in Africa than in Asia. (Ahmed & Islam, 2010)

(Wyplosz, 2002), defines three different strategies – wait, buckle up, and one step at a time to reap the benefits of liberalization with minimal costs. In his opinion, most countries will eventually liberalize, but this needs to be done as a matter of priority. The effects of liberalization in the developing and the developed countries suggest that it may be useful to wait until a proper economic and, possibly political infrastructure has been built. Liberalization is also a source of widespread instability. Therefore, it is important to set up adequate welfare systems before liberalizing. Free markets may raise efficiency, but, at least initially, they are known to

increase inequality. The boom years must be used to prepare for the bust years. The most delicate steps are the liberalization of the domestic financial markets and of the capital account. Spacing out these steps over several years seems reasonable.

(Bascom, 1994) finds that price stability – or, more broadly, macroeconomic stability – is vital for a successful financial reform program controlling inflation is the determining factors to achieve a sustainable level of positive real interest rates. However he states effective inflation control depends on the ability of the government to control monetary expansion, which in turn depends, among other things, on the condition and financing of the government's budget deficit. While opening capital account may be come after the liberalization domestic interest rates are made competitive with international interest rates. Yet, in an inflationary environment, if domestic financial market reforms are to be considered credible and sustainable, the fiscal deficit must first be controlled. Large fiscal deficits financed by monetary expansion or inflation tax would require the central bank to keep the level of domestic interest rates low while imposing high reserve requirements on commercial banks.

According to (Bascom, 1994), the main standard of sequencing dictates domestic financial market reform and domestic interest rates to get in to an international level. Consecutively, the level of domestic interest rates can be increased only after the fiscal deficit is under control.

Another issues regarding sequencing is capital and current accounts, liberalization which includes the reduction of tariffs and removal of capital controls. It is evident that countries tend to follow different sequencing paths in implementation of the liberalization of the capital and current account. With the fiscal deficit under control, domestic financial markets liberalized, and domestic real interest rates established at internationally competitive levels, opening of the capital account would likely generate significant capital inflows. A successful current account liberalization policy that may include a reduction of import tariffs, an elimination of import quotas, and currency convertibility, generally requires a real exchange rate depreciation to assist the transition to the tradable-goods sector from a protective to a liberalized environment. Thus, in most cases, the capital and current accounts should not be simultaneously liberalized. (Bascom, 1994)

Although, there is no consensus on the right sequencing of reforms empirical evidence showed financial system liberalization cannot be effective without sound and legal institutional frame work. (Kahsay, 2014). One thing evident is By and large when the liberalization measures are taken in a favorable policy environment have a significant benefits and sustain long term economic growth.

2.14 Financial Liberalization and Welfare

The major limitation of financial liberalization by critics is that it ignores the welfare and leads to unequal distribution of income. As market becomes dominant competition prevails. Due to the seizure of government subsidies sectors that has strategically important become more deprived and sector needing preferential treatment in initial period cannot be developed. On contrary the proponents of financial liberalization advocate that welfare and distribution of income will be enhanced. However, with the exception of (Shrestha & Chowdhury, 2007) empirical evidence regarding welfare is scarce in the literature. (Shrestha & Chowdhury, 2007), argue the cause of lack of empirical studies mainly owing to the difficulty in measuring welfare and also due to data limitation. A number of studies discuss this issue from a theoretical point of view only.

The term welfare as defined by (Shrestha M. B., 2005) encompasses employment opportunities, appropriate level of wages, supply of essential goods and services to the general public, and the like. In a poverty-ridden economy, reducing the incidence of poverty also may come under welfare. Similarly, redistribution of national income also is viewed to be closely related to welfare.

(Shaw, 1973), asserts the stability of growth in output and employment are financial liberalization gains. A rise in interest rates and foreign-exchange rates relative to wage rates may both raise employment and increase the wage share of income. Thus, financial liberalization tends to equalize the distribution of income. While, (Edwards S. , 1989) claims that financial liberalization contributes to welfare through increased employment and increased wage rates and thus tends to equalize the distribution of income.

(Bhattarai, 2001), State financial liberalization improves efficiency and brings more equal distribution of income over time. He further notes the response of saving and investment regarding degree of factor of substitution tends to be higher in a complete than in partial or piecemeal liberalization. Increased output raises the level of income, consumption, utility and

overall welfare of rural and urban households. The improvement of distribution of income by raising the wage rate of rural than for urban labor is evident in liberalization as Rural labor intensive sectors invest more with increased access to financial institutions and demand more labor to complement additional capital employed in these sectors. More additional demand for unskilled labor than for the skilled labor causes a rise in the ratio of rural to urban wage rate significantly in the liberalized regime. Over time redistribution occurs through the labor market, and ultimately results in larger welfare gains for rural households than to urban households.

(Kahkonen, 1987), considers liberalization process to improve welfare through increased investment. He believes welfare could be improved by liberalizing the financial market which leads to the reforms in labor market and freeing up agricultural prices to bring them more closely in line with relative prices prevailing in the international market.

(Gourinchas & Jeanne, 2005), postulate that: “For the typical non OECD country, the welfare gain from switching from complete financial autarky to perfect capital mobility is equivalent to a permanent increase in consumption of about 1 percent.” According to them, international financial integration would lead to important quantitative effects only if it can “import” foreign productivity, or decrease economic distortions (i.e., if it increases Total Factor of Production).

(Edwards & van Wijnbergen, 1986), claim that financial liberalization increases welfare unambiguously through tariff reductions but the effect can be negative if there is a presence of distortions in the markets.

On contrary (Fry M. J., 1995), asserts that financial repression in the form of consumer borrowing constraints may improve welfare. The distortionary welfare loss created by the borrowing constraint is offset by faster growth and that in turn increases the wage rate. This welfare gain grows over time while the distortionary loss remains constant. Hence welfare loss is unlikely to outweigh welfare gain. (Battle, 1997), argues the ambiguity of the financial liberalization by pointing out the direct effect of an increase in the deposit rate, subsequent to financial liberalization, is welfare improving because savings increase from a sub-optimal level to optimal level. However she notes the fall in consumption due to decrease in demand for non-traded goods will cause the aggregate employment to fall, leading to welfare deterioration.

(Daitoh, 2003), claim that financial liberalization in developing countries may aggravate welfare unless the labor market is reformed. The rate of urban unemployment unambiguously declines the volume of it shrinks if the rural-to-urban employment rate and the urban unemployment rate are sufficiently high relative to the wage elasticity of agricultural labor demand. The national income increases if agriculture is dominant in the domestic production. In such an economy, the financial liberalization“ advocated by the McKinnon-Shaw school may aggravate the welfare even if it eliminates the financial repression” Under the repressed financial system the wage rates tend to be artificially high and the interest rates tend to be artificially low. Liberalization policy increases the interest rate but does not reduce the artificially high wage rate, which results in increased unemployment.

(Wyplosz, 2002), hold the view that free markets may raise efficiency but, at least initially, they are known to increase income inequality. In an empirical work by (Mesa-Lago, 1997) studied the effects of financial liberalization in eight Latin American countries for the period 1980-90. He documents that the implementation of economic restructuring policies in the period of fiscal crisis resulting from heavy debt burden has resulted in welfare loss in this region. After the implementation of liberalization policies the regional GDP per capita declined, the real minimum wages in urban areas declined, the open unemployment rate in urban areas rapidly increased, the poverty incidence for the population increased, the regional average rate of inflation increased 26 times, and public expenditures in social services were cut afflicting the most vulnerable segments of the population. (Mesa-Lago, 1997), claims that capital and business mainly benefited from economic reform, but labor and the poor mostly suffered from the effects of that reform due to the rising unemployment, shrinking real minimum wages and pensions, increase in prices of essential consumer goods, reduction in social services, and expanding poverty and income inequality. The above survey of the literature shows that there is no unanimous view on the welfare effects of financial liberalization.

In this context, this study aims at examining the underlying conjecture behind these diverging viewpoints and conducting empirical tests on Ethiopian time series data in order to ascertain the validity of these viewpoints.

2.15 Financial Liberalization and Financial Fragility

Financial liberalization has been proposed as a cure to the ills of repression with a belief that it improves and enhances the efficiency of investment and eventually economic growth. Overall, financial liberalization has been broken down into three major reforms. This is the liberalization of the movement of capital, the opening of financial markets to international operators and deregulation in lending and deposit rates to increase interbank competition. The proliferation of crises in countries such as Mexico (1995), Asian countries (1997), Brazil (1998), and Turkey (2001) opened the debate on the benefits of deregulation of financial activity. (Farhani, et al. 2015)

(Weller, 1999), uses data for 27 emerging economies from 1973 to 1998 claim that emerging economies are becoming more susceptible to both currency and banking crises after financial liberalization the likelihood of currency crises may increase with stronger reactions to financial variables than to real or external trade variables. The intensive competition pressurizes the domestic banks which consecutively results in fragility. It may simply help to create an optimistic overall outlook in an initial ‘deregulation euphoria’ which breeds expansion of credit for projects of lesser quality. Thus, it is essential to set up stabilizing institutions before the liberalization process as they are likely to experience an increase in the likelihood of banking and currency crises without countervailing measures.

(Stiglitz, 1985), consider information inequality between investors resulted in a stowaway behavior. Still, Stiglitz assumes that imperfect market conditions lead to a bad adjustment of savings to investment. This state of affairs tends to raise crises risk. In this perspective, (Mehrez & Kaufman, 2000), used data from a sample of 53 countries during the 1977-1997 period assume that low-transparency and highly-corrupt economies are more likely to be threatened by financial instability. They claim that the probability of a banking crisis diminishes when there is a low corruption level.

(Demirguc-Kunt & Detragiache, 2001), using a data set for 53 developed and developing countries study during the 1980-1995 period where Institutional quality is operationalized by GDP per capita, law enforcement, bureaucracy and corruption. The regression results yielded positive and very significant relationships between financial liberalization and institutional variables. They concluded that financial liberalization is a significant factor leading to fragility

they further argue the effect still exist even if it is carried out after macroeconomic stabilization is achieved.

(Shrestha M. B., 2005) Notes even in situations where initial macroeconomic conditions are favorable circumstances such as in East Asia vividly shows financial liberalization remains a treacherous policy exercise. Liberalization undermines effective financial governance, both at the international and national levels, increasing the vulnerability of the system to crisis.

(Rachdi, 2010), using a sample of 12 emerging countries during the 1980-2003 period based on the application of a multivariate logit conclude that a financial liberalization policy undertaken in underdeveloped institutional environment characterized by its poor banking supervision is likely to enhance proliferation of banking crises. Likewise (Wyplosz, 2002), uses data from 27 developing and developed countries for the sample period 1977-1999, concludes that emerging countries face more destabilizing effect than that of the advanced economies financial liberalization is considerably more destabilizing in developing countries than in developed countries. Wyplosz argue that many countries in Europe and Asia have been able to grow fast over decades while retaining strict financial restraints. This alone shows that there is no urgency to undertake liberalization and when it is being taken, it should be approached with great caution.

The argument of liberalization inducing risk-taking behavior and may cause banking crises by (Demirgüç-Kunt & Detragiache, 1998; 2001); (Mehrez & Kaufman, 2000) is debated by (Choudhry & De Haan, 2008) asserts that the financial liberalization data used in these studies was quite limited and rather subjective. Using (Abiad & Mody, 2008) indicators of financial reform, they argue that financial liberalization reduces the likelihood of systemic banking crises.

(Arphasil, 2001) Exemplifying the Asian crisis affirms that financial liberalization exposes threats to financial stability through capital movements by allowing an easy access to financial intermediaries to take risky investments and to misallocate resources. The liberalization of interest rates and capital account transactions lead to a credit boom, mostly financed by short-term borrowings from abroad. Since, such a boom built on an unstable foundation it will ultimately lead to financial crisis

(Lim Mah-Hui & Maru, 2010) Note that capital international flows are a source of risk for world economy, mainly for Singapore which they studied. They have more important macroeconomic costs than the 1980s debt crisis. For instance, in Mexico(1995), in Thailand, South Korea and Malaysia in (1998), the Gross Domestic Product (GDP) decreased by 7% provoking a wave of unemployment and social problems. These crises are nurtured with the new practices adopted by financial markets agents. These new practices, based essentially on indebtedness to finance economic activities, resulted in the creation of new interconnections between financial markets and unstable countries.

(Wilmarth, 2004), warns financial instability may be accompanied by instability of financial and real asset prices. This phenomenon is known as financial bubbles. Assets price bubbles initiate with a financial liberalization or a decision of raising economy-targeted credits issued by a central bank. The resulting credit growth leads to an increase in assets prices which feed on the financial bubble. Then, the bubble explodes and prices crash, creating bankruptcies of the firms or the economic agents having borrowed money in order to purchase assets with inflated prices. Banking or a change crisis may follow. Thus, financial instability starts with a financial crisis. This phenomenon may compromise the good functioning of the financial system by diminishing trust in financial institutions, leading to a decrease in savings and resulting in capital flights. Vulnerability associated with capital flights, a large proportion of credits granted to the private sector and an increase in credits positively affect banking crisis occurrence probability. (Ben Gamra & Plihon, 2008), study 22 emerging countries over the 1970-2002 period asserts the importance of sequencing. They state, the degree, priorities and rhythm of financial liberalization and modality influence banking crises this confirms the hypothesis of (Wilmarth, 2004).

(Crotty & Lee , 2002), on their study of the south Korean experience claim that proximate cause of the East Asian financial crisis of 1997 is a result of an inapt financial liberalization. They claim conventional state guided financial system shielded from international financial market through tight capital controls is perhaps should be chosen over financial reform as it fails to address the transformation of finance, labor, and product markets essential to egalitarian growth.

(Jedidi & Mensi, 2011), Citing the work of (Wachtel, 2001); (Ben Gamra & Plihon, 2008) and (Umutlu, et al, 2010) state the improbability of banking crisis in the case of a barter economy. Financial instability thus occurs only in monetarised and liberalized economies. Yet, no country can avoid the monetary and financial spheres and consequently all kinds of financial instability. The proliferation of the recent crises has strengthened financial instability.

2.16 Overview of the 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.

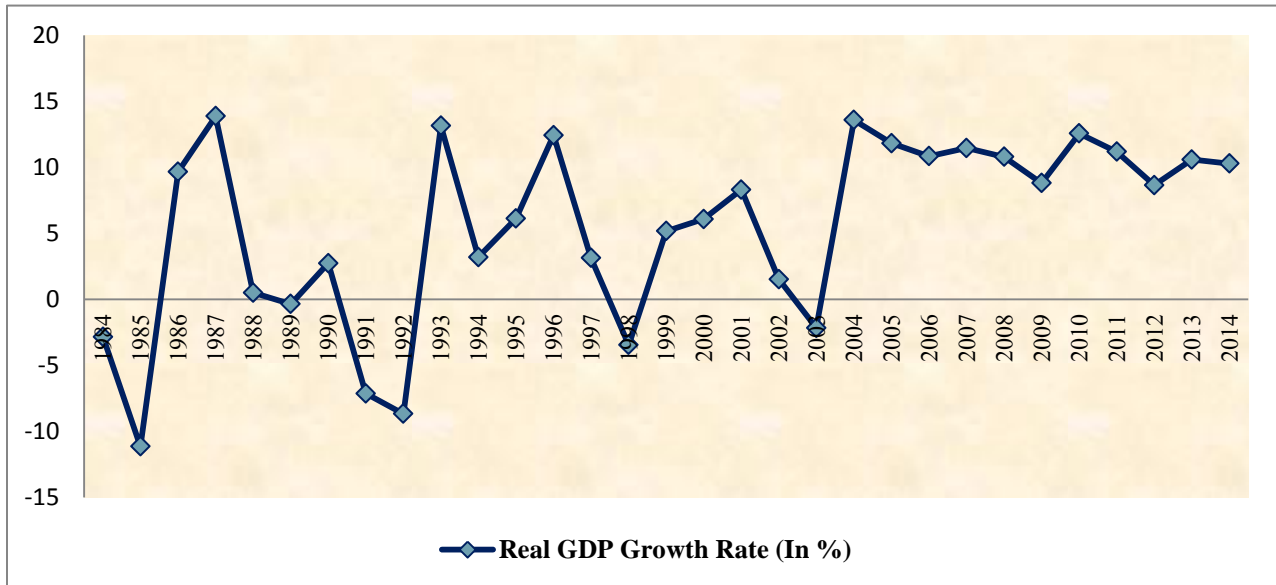
In modern Ethiopian political economic history, we can distinguish three regimes that followed unique macroeconomic policies with its impact on macroeconomic growth performance of the country. These are the period of pre 1974(the monarchy regime), the period 1974-1991(the military regime) and 1992 to 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 per cent 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) below.

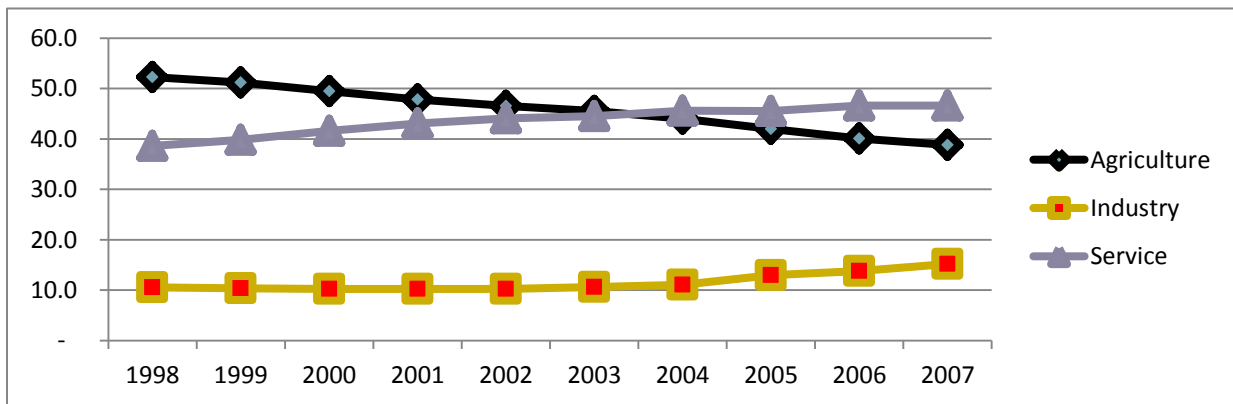
Figure 2: Growth rate of Real GDP



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 2).

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 coefficient³ (.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).

2.17. Overview of the 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:

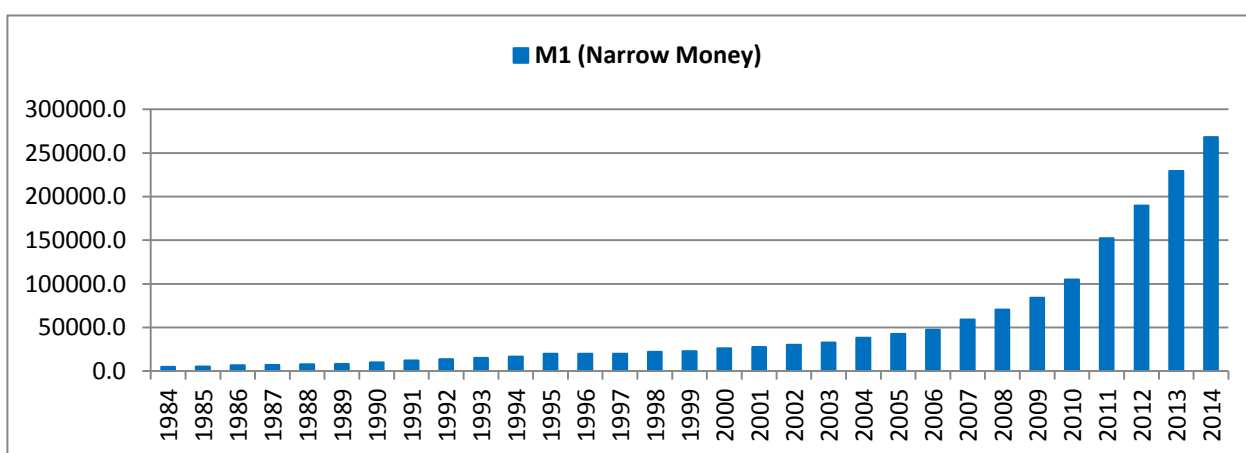
- Fostering monetary, credit and financial conditions conducive to orderly, balanced and sustained economic growth and development.
- Preserve the purchasing power of the national currency – ensuring that the level of money supply is generally consistent with developments in the macro- economy and intervening 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;

³Gini coefficient value 0 refers to the equal distribution, and value 1 refers to the extremely unequal distribution of income.

- 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.

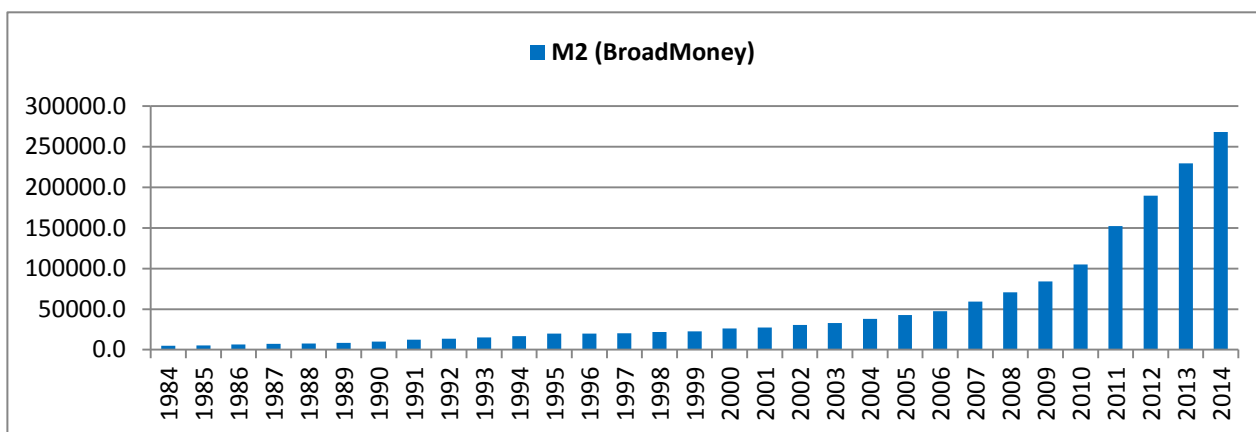
The narrow money (M1) increased by 14 per cent in 2014 from the previous year and reached to 134 trillion birr, whereas broad money (M2) increased by 21 per cent in this period and reached 297 trillion birr (Figure 3.8 and 3.9). The growth rate of M2 has been higher than that of M1. The average annual growth rate of M1 stood at 15 per cent during 1984-2014, while that of M2 stood at 11 per cent during the same period.

Figure 4: Monetary expansions. (In thousands)



Source: Author’s computation of NBE data

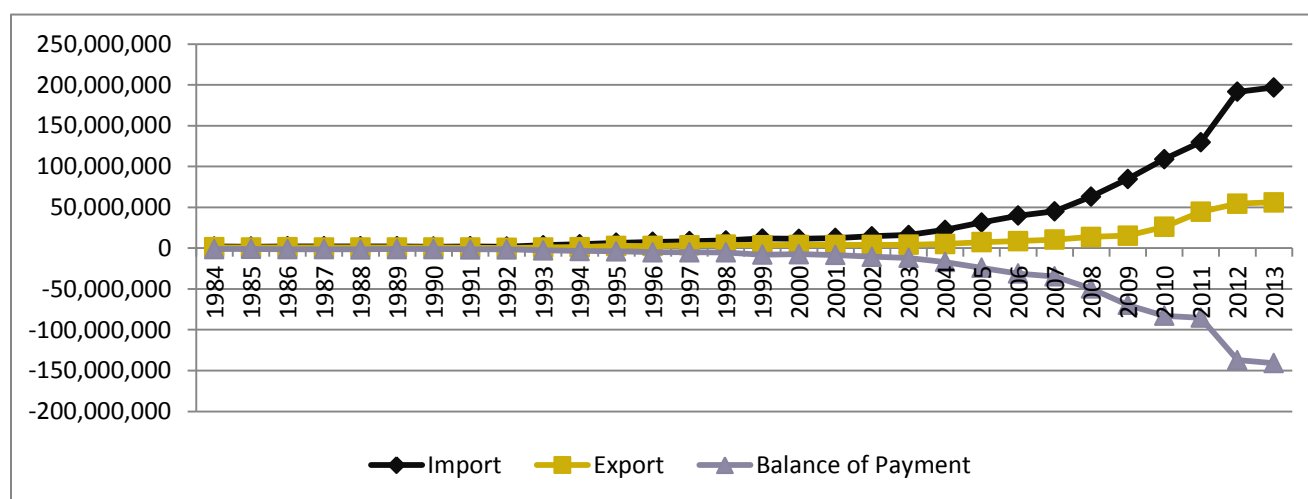
Figure 5: Monetary Growth (In thousands)



Source: Author’s computation of NBE Data

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, et al, 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. (In thousands)



Source: Authors Computation of NBE data

As shown in the above Figure 2.4, 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 2.4, after the devaluation of Birr in 1992 by 141 percent against USD the earning from the export start to steadily increase.

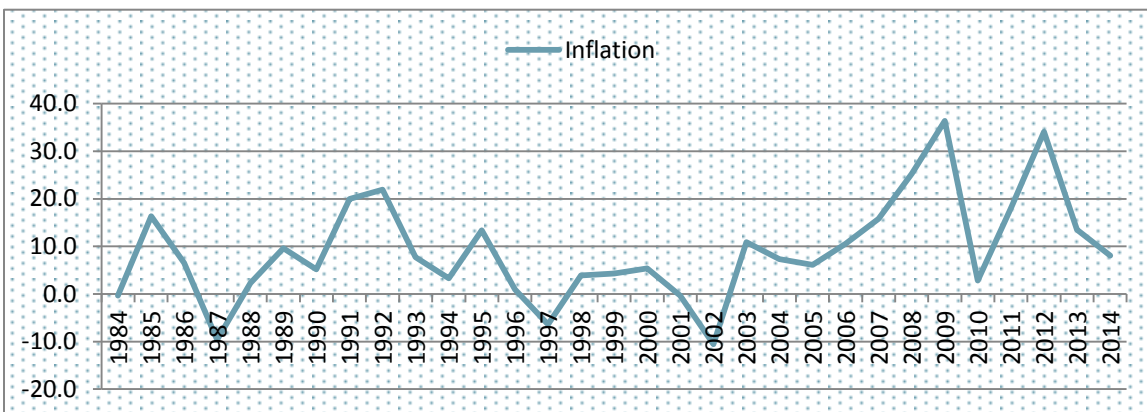
(Kassie, 2015), point out the high commodity and geographic concentration characterize the Ethiopian export that depends on agricultural output, though relatively inelastic as compared to industrial exports it is highly vulnerable to external shock. On the other hand, imports of the country is composed 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.

The trend of inflation shows a sharp increase in 2003/04 despite rapid economic growth at the same period. (Geda & Tafere , 2011), point out the cause of the inflation associated with a rise in the price of food, which is the result of food demand triggered by an alarming rise in money supply/credit expansion, inflation expectation and international food price hike. During 2008 stood at about 33 percent with food inflation being about 49 percent. This was huge macroeconomic shock in the history of Ethiopia for the last five decades and until 2003. The high rate of inflation continued until 2011/12. The 12 month moving average general inflation rate, which shows a longer inflation situation, was 18 percent for June 2010/11 and 33.7 percent in June 2011/12.

According to the MoFEC report (2012/13) the high inflation rate, particularly in the year 2011/12 adversely affected the wellbeing of people and the effect to promote private investment. As a result, the Ethiopian government had taken policy measurements (prudent fiscal and monetary policy) and price stabilization intervention. Consequently, as of June 2012/13, the general inflation declined to 13.5 percent. As the NBE report indicates (2013/14), the general inflation declined form 13.5 percent in 2012/13 to 8.1 percent in 2013/14. Generally, we can say that, in the Ethiopian history inflation was at reasonable low level (i.e., dose not harm the economy significantly) except for the period 2008-2012.

Figure 7: Trends of inflation.



Source: Author's computation of NBE Data

The structural change in economy by the current regime has aided the country to register remarkable economic growth over the last decade mainly attributed to the Government led development policies emphasizing on public investment, commercialization of agriculture and non-farm private sector development as well as strong support for the export has aided the economy to grow consistently. The major economic indicators show the country is on the right track for it is plan of joining the lower level of the middle income countries.

2.18 Research Gap

Financial liberalization measure has a wide variety of impact on economic development and financial stability. Most of the researches conducted previously has mainly emphasized on growth or stability the effect of the financial reform measures has been seen in fragmented pieces in the past this type of study render narrower scope of the wider spectrum of effect of financial liberalization.

In terms of Single country studies none have been carried out in the scope of this particular study on Ethiopia prior studies conducted by (Garedachew, 2011) viewed sequencing of the financial liberalization qualitatively, while (Kahsay, 2014) focused on the banking sector liberalization on economic growth; sequencing and timing process and assess performance indicators using ADRL co-integration approach. The previous researches have viewed financial liberalization in fragmented way using different variables from the current study and none have been conducted in a complete set of frame work to explain the impact of the change in Policy variables according to the knowledge of the researcher.

This study tried to fill this gap by adopting previous framework of (Shrestha M. B., 2005) to assess the effect of financial liberalization on growth welfare and financial stability on Ethiopia.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

In this chapter the methodology for estimation and establishing data characteristics for various variables used in modeling, the different data sources and approaches to data analysis are presented. Tests conducted to establish the behavior of various individual series and residuals are discussed. The chapter also discusses some conceptual problems and major assumptions related to some selected data series in the study.

3.1 Research design

The Main objective of this study is to assess the impact of financial liberalization in terms of growth, welfare and stability in Ethiopia. This study employed explanatory research method as this method allows the researcher to test the hypothesis by allowing for inferences to be drawn about the association and causality among variables. (Cooper & Schindler, 2001), discussed that explanatory studies unlike descriptive studies, go beyond observing and describing the condition and tries to explain the reasons of the phenomenon. Furthermore, the research adopted quantitative research approach with the aid of time series data to analyze the resulting estimates so that stated objectives and hypothesis are addressed accordingly.

3.2 Data and sources

Secondary data, from Ministry of Finance and Economic Cooperation, National Bank and Central Statistics Agency records covering the window period 1984-2014 of the country was used in this study. The time period is selected due to the availability of the data of the main variables as well as for most of the period prior to 1984 the financial system of the country was fully centralized and found consistent with the sample period prior to the liberalization measure.

3.3 Econometric Model

From the vast literatures survey of financial liberalization, it is clear that most of the previous studies have focused on some particular aspect and generalized their findings as the overall impact of the policy. A few country-focused studies have tried to analyze various aspects of financial liberalization, but these studies have been done in fragmented

parts and are incomplete to show the wider aspect of economic sphere.

Even though, most literatures lack single integrated framework to study the overall impact of the financial liberalization policy. (Shrestha M. B., 2005), devised a way to measure the overall impact of the policy in his study by doing so he bridged this gap by proposing an aggregated framework for studying the overall impact of financial liberalization. The framework is robust as it covers main aspect of the economy i.e. growth, welfare and stability.

The optimal combination of growth, welfare and stability decides the achievement of social welfare though particular emphasis for a particular dimension may vary according to the country's perspective and time horizon. Financial liberalization being an economic policy the impact measurement would be appropriate if it is done according to the above three aspects. The following subsections specify the model in a comprehensive manner.

3.3.1 Financial Sector Widening

It 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. To examine this hypothesis the following Equation has been rested.

$$LVBT_t = \alpha + \alpha LGDPR_t + \alpha IRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots \dots \dots (3.1)$$

Where: LVBT: Total volume of the bank transaction

Variable	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
LVBT	<i>(VBT)Total volume of the bank transaction =(TDB)Total deposits of commercial banks that include demand deposit, saving deposit, and fixed deposit +(TCB) Total credit extended by commercial banks to the private sector as well as the public sector.</i>	Total volume of the bank transaction	<i>Dependent variable</i>
LGDPR	<i>Annual real GDP</i>	Log of real gross domestic product	(+)
IRR	<i>IRR=(Saving interest rate-Inflation rate)</i>	real interest rate	(+)
LPBB	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of IRR, LPPB and FLI are critical in testing the first hypothesis.

3.3.2 Interest Rate, Saving and investment

In order to test the hypothesis of financial liberalizations in relationship between interest rates, bank savings, and bank credits are analyzed. The following equation is used to examine the interest rate effect on savings

$$LTDR_t = \alpha + \alpha LGDPR_t + \alpha DRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots \dots \dots (3.2)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
<i>LTDR</i>	<i>Real time deposit rate held at bank include all deposit held by the bank</i>	Log of Real time deposit rate held at bank	<i>Dependent variable</i>
LGDPR	<i>Annual real GDP</i>	Log of real gross domestic product	(+)
DRR	<i>Average real deposit rate</i>	Average real deposit rate	(+)
LPBB	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of the DRR, FLI and LPBB are essential in not rejecting the second hypothesis. To examine the effect of interest rate on investment, the following equation was employed. Real

total bank credit (TBCR) is used here as the proxy of the investment. The equation can be transformed into the following natural log form:

$$LTBCR_t = \alpha + \alpha LTDR_t + \alpha LRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots\dots\dots (3.3)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
LTBCR	<i>Real Total Bank Credit (credit extended by banks to the private sector as well as to the public sector)</i>	Log of Real Total Bank Credit	<i>Dependent variable</i>
LTDR	<i>Real Time Deposits (saving and fixed deposits at banks)</i>	Log of Real Time Deposits	(+)
LRR	<i>Real Lending Rate (average of the various category lending rates)</i>	Log of Real Lending Rate	(-)
LPBB	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of FLI and LPBB are essential in none rejecting the third hypothesis.

3.3.3 Economic Growth and industrialization

The essence of pursuing financial liberalization policy is to have higher economic growth and industrial development which is a crucial for long term sustainability of a country like Ethiopia which pursues the strategy of agricultural led economy for it is development. Hence to examine the impact of the relationship between financial liberalization and economic growth the following equation is employed.

$$LGDP = \alpha + \alpha LFD_t + \alpha IRR_t + \alpha FLI_t + e_t \dots\dots\dots (3.4)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
LGDP	<i>Per capita real gross domestic product</i>	Log of Per capita real gross domestic product	<i>Dependent variable</i>
LFD	<i>Financial depth= Ratio of total bank deposit liabilities divided by nominal gross domestic product</i>	Log of Financial depth	(+)
IRR	<i>Real Interest of Average of one year saving deposit rate</i>	Log of Real Interest Rate	(+)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of all the independent variable indicate the none rejection of forth hypothesis

The Ethiopian economy is segregated into (1) Agriculture, fishing and allied activities (2) Industry (3) Services to analyze the impact of liberalization on industrial development the following relationship has been estimated

$$LGDPI_t = \alpha + \alpha_1 LTBCR_t + \alpha_2 IRR_t + \alpha_3 FLI_t + e_t \dots\dots\dots(3.5)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
<i>LGDPI</i>	<i>Real gross domestic product of the industry sector</i>	Log of Real gross domestic product of the industry sector	<i>Dependent variable</i>
LTBCR	<i>Real Total Bank Credit (credit extended by banks to the private sector as well as to the public sector)</i>	Log of Real Total Bank Credit	(+)
IRR	<i>Real Interest of Average of one year saving deposit rate</i>	Log of Real Interest Rate	(+)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of all the independent variable being non negative indicate the none rejection of fifth hypothesis

3.3.4 Financial Development

(Shrestha M. B., 2005) Point out that the main emphasis of financial liberalization lies on the financial development of a country. A highly developed financial system is regarded as a catalyst to economic growth and development. Hence, to examine the impact of financial liberalization on financial development, the following relationship is estimated.

$$LFD_t = \alpha + \alpha LGDPP + \alpha LVBT + \alpha IRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots\dots\dots (3.6)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
<i>LFD</i>	<i>Financial depth= Ratio of total bank deposit liabilities divided by nominal gross domestic product</i>	Log of Financial depth	<i>Dependent variable</i>
<i>LGDP</i>	<i>Per capita real gross domestic product</i>	Log of Per capita real gross domestic product	(+)
<i>LVBT</i>	<i>(VBT)Total volume of the bank transaction divided by Per capital Gross domestic Product</i>	Total volume of the bank transaction	(+)
<i>IRR</i>	<i>Real Interest of Average of one year saving deposit rate</i>	Log of Real Interest Rate	(+)
<i>LPBB</i>	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
<i>FLI</i>	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of all the independent variable complying with the expectation indicate the none rejection of sixth hypothesis

3.3.5 Efficiency in Resource Allocation

It has been hypothesized by McKinnon and Shaw interest rate deregulation would lead helps in moving scarce financial resources from low yielding projects to high yielding ones. It is a common assumption that the private sector is more efficient than public sector in utilizing the financial resources, and that efficiency can be reflected in the growth of the non-agricultural GDP. From this point of view, the relationship between the share of the bank credit to private sector and the share of the non-agricultural GDP in terms of total GDP can portray a picture of the impact of financial liberalization on resource allocation. (Shrestha M. B., 2005).

To analyze the efficiency of the financial liberalization on economic growth the following equation is estimated.

$$LSNGDP_t = \alpha + \alpha LSBCP_t + \alpha IRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots \dots \dots (3.7)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
<i>SNGDP</i>	<i>Share of the non-agricultural GDP in total GDP</i>	Log of Share of the non-agricultural GDP in total GDP	<i>Dependent variable</i>
<i>LSBCP</i>	<i>Share of bank credit to private sector in total bank credit</i>	Log of Share of bank credit to private sector in total bank credit	(+)
<i>LVBT</i>	<i>(VBT)Total volume of the bank transaction divided by Per capital Gross domestic Product</i>	Total volume of the bank transaction	(+)
<i>IRR</i>	<i>Real Interest of Average of one year saving deposit rate</i>	Log of Real Interest Rate	(+)
<i>LPBB</i>	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
<i>FLI</i>	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of all the independent variable indicate the none rejection of seventh hypothesis

3.3.6 Employment Opportunities

The data on the employment status is not available for the studied period. Due to this difficulty, the impact of financial liberalization on employment cannot be evaluated directly. So, as an alternative, the data on bank credit to the employment generating sectors, *viz*, the agriculture, industry and service sectors are analyzed to get the impression of change in the employment status as a result of the financial liberalization. The simple assumption behind this is that increased bank credit would result in increased employment opportunities, in these sectors. In fact, increased capital does not necessarily result into increased employment opportunities since such capital might be used for other inputs.

Hence to estimate the relationship between financial liberalization and employment opportunity the following equation is estimated.

$$LBCSS_t = \alpha + \alpha LFD_t + \alpha IRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots\dots\dots(3.8)$$

Variable	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
LBCSS	Total bank credit to selected sectors	Log of banks credit to selected sectors	Dependent variable
LFD	Financial depth= Ratio of total bank deposit liabilities divided by nominal gross domestic product	Log of Financial depth	(+)
LRR	Real Average Lending Rate of Commercial Banks	Log of Lending Rate of Commercial Banks	(+/-)
LPBB	PBB=Total population/Total number of Bank branch	Log of average population density per bank branch	(-)
FLI	Index constructed	Financial liberalization index	(+)

The sign of LFD, FLI and LPBB indicate the none rejection of eighth hypothesis

3.3.7 Poverty Alleviation and Redistribution of Income

The financial sector may help alleviate poverty by providing credit facilities to the poor sections of the population. Since the majority of the poor live and work in rural areas, the flow of credit to rural areas may be taken as one of the indicators of the financial sector’s role in redistribution of income and poverty alleviation (Acharya, 2003)

In this regard the money channeled to the agricultural sector as well as cooperatives could be a well suited proxy to the level of contribution of financial liberalization to Poverty alleviation and redistribution of income. Within this concept in mind the following relationship has been estimated

$$LSBCC_t = \alpha + \alpha LFD_t + \alpha IRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots\dots\dots(3.9)$$

Variable	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
LSBCC	Share of the bank credit to the Cooperatives	Log Share of the bank credit to the Cooperatives	Dependent variable
LFD	Financial depth= Ratio of total bank deposit liabilities divided by nominal gross domestic product	Log of Financial depth	(+)
IRR	Real Interest of Average of one year saving deposit rate	Log of Real Interest Rate	(+)
LPBB	PBB=Total population/Total number of Bank branch	Log of average population density per bank branch	(-)
FLI	Index constructed	Financial liberalization index	(+)

The sign of LFD, FLI and LPBB indicate the none rejection of ninth hypothesis

3.3.8 Financial Sustainability

The financial stability is reflected in the performance of the banking system, which is specifically related to the loan performances, and which can be shown by the figures of return on the bank assets and amount of the bad loans. Hence due to the unavailability of the data for the time period stated Credit-deposit ratio of banks (total credit extended by banks divided by the total deposit liabilities) were assumed to be the proxy to examine financial fragility .the following equation is estimated to assess the relationship.

$$LCDR_t = \alpha + \alpha LRR_t + \alpha LPBB_t + \alpha FLI_t + e_t \dots \dots \dots (3.10)$$

<i>Variable</i>	Operationalization of the variables	Descriptions of the variables	Expected signs of the coefficients
<i>LCDR</i>	<i>Credit-deposit ratio of banks (total credit extended by banks divided by the total deposit liabilities)</i>	Log Credit-deposit ratio of banks	<i>Dependent variable</i>
LRR	<i>Real Average Lending Rate of Commercial Banks</i>	Log of Lending Rate of Commercial Banks	(+)
LPBB	<i>PBB=Total population/Total number of Bank branch</i>	Log of average population density per bank branch	(-)
FLI	<i>Index constructed</i>	Financial liberalization index	(+)

The sign of LRR, FLI and LPBB indicate the none rejection of tenth hypothesis

3.4 Estimation method

To test the long run relationship between dependent variable and independent variable, the study applies Autoregressive Distributed Lag (ARDL) Model. It is proposed by (Pesaran and Shin ,1997; 1999) to investigate the existence of co-integration relationship among variables. This approach has specific advantages over Johansen maximum Likelihood (1988) co-integration approaches: First it avoids the problem of the order of integration associated irrespective of I(0) or I(1). Second unlike Johansen co-integration which is valid for large sample size, it is suitable for small sample size study (Pesaran *et al*, 2001). Third it provides unbiased estimates of the long run model and valid t-statistics even when some of the regressors are endogenous (Harris & Sollis, 2003)

Prior to the estimation the study first investigate the time series properties of the data by using Augmented Dickey-Fuller (ADF). The unit root tests will be used to check the stationarity of the

variables and to check none of the variables are order two (I.e. I (2)), which is precondition to apply ARDL model (Pesaran, *et al.*, 2001).

The ARDL model specified in equation tested using the appropriate lag-length selection criterion. According to (Pesaran & Shin, 1999), as cited in (Narayan , 2004) for the annual data a maximum of two lag lengths are recommended. From this, a lag length that minimize AIC is chosen. In addition to this, we have also used AIC to determine the optimal lag because it is a better choice for smaller sample size data as this study. Apart from this, AIC found to produce the least probability of under estimation among all criteria available. (Liew & Khimsen , 2004)

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

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

This chapter deals with the presentation of the financial liberalization index construction, unit root results, long run and short run co-integration and causality test, and interpretation of the data analyzed.

4.1 Construction of the Financial Liberalization Index (FLI)

Financial Liberalization Index was constructed in order to study the level of financial liberalization process in Ethiopia over time. Financial liberalization is a process that includes various changes, amendments on existing policies and introduction of new policies as per the requirements to support the liberal economy in a nation. It's therefore not a one night stand implementation. Financial liberalization index was constructed by using the method proposed and used by (Bandiera, Caprio et al 2000), (Laeven, 2003), (Shrestha M. B., 2005) and (Paude, 2007). This study used the major policy components of financial liberalization to construct the FLI for Ethiopia. Using principle component analysis, an eigenvalue established that corresponded to each policy component of Financial Liberalization. The equation is established as presented in the following section.

4.2 The Financial Liberalization Index equation

The examination of financial sector reforms in Ethiopia follows six key measures of financial liberalization that characterized the process from 1984 through 2014. These components are; (1) interest rate deregulation (IRD), (2) removal of entry barriers (REB), (3) reduction in reserve requirement(RRR), (4) easing in credit controls(ECC), (5) introduction of prudential regulations(IPR),and (6) external account liberalization(EAL).The progress of financial liberalization that is indicated by financial liberalization index was captured using the (Shrestha M. B., 2005) method of principal component analysis even though the initial principal component include Stock market liberalization and Privatization of the State owned banks. These two components has been left out due to the absence of activity in the policy variables the Software employed could not compute the equation which has no variation during the study period.

Hence the two variables are omitted from the computation of the index for this particular reason and it is simplified in equation 4.1.

$$FLI_t = \alpha_1 IRD_t + \alpha_2 REB_t + \alpha_3 EAL_t + \alpha_4 IPR_t + \alpha_5 ECC_t + \alpha_6 RRR_t \dots \dots \dots (4.1)$$

Where, $t = 1984, 1985 \dots 2014$ and α_t is the weight of the component, which is calculated by employing the first principal component method, and in our case, eigenvector of the selected principal component method denoted by α_t was used.

In order to derive the financial liberalization index, (Abiad & Mody, 2008) criterion of coding was used for interest rate deregulation, removal of entry barriers, reduction in reserve requirement, easing in credit controls to avoid the overstatement or understatement of the measurement in policy variable and converted back to have the value between 0 and 1. External account liberalization was initially computed using (Abiad & Mody, 2008) also were incorporated with the definition of (Bascom, 1994) and benchmarking (Shrestha M. B., 2005) two step Liberalization process for external account liberalization Current and capital account has a value of half of the liberalization activity this According to the (Shrestha M. B., 2005) arbitrary coding evidently express the variation in the variable. Introduction of prudential regulations has been measured using the previous assumption of (Shrestha M. B., 2005). The Introduction of prudential regulations assumes the independency of the National Bank from the Government to function. Easing in credit control

(Kahsay, 2014), states since 1992 credit policy reforms emerged through the termination of discriminator interest rate and preferential sector lending modalities and reduce credit controls to promote domestic and foreign investment consistent to the ‘Washington Consensus’ or Structural Adjustment Policies (SAPs) premises.

After the reform no set of discriminatory lending activity has been dictated by the law for that Easing in credit control here we can safely assume credit is fully liberalized.

Each policy variable can take a value between 0 and 1 depending on the implementation status. When a particular sector is fully liberalized, that policy variable takes a value of 1 and when that sector remains regulated, it takes a value of 0. To capture the scenario of partial and phase-wise gradual liberalization of a particular sector, partial values like 0.33, 0.50, and 0.66 have been

assigned. A value of 0.50 indicates the first phase of partial deregulation in a two-phased deregulation process, whereas a value 0.33 and 0.66 indicate the first and second phase, respectively, in a three-phased deregulation process. The two-phased process takes a value of 1 in the second phase and the three-phased case takes a value of 1 in the third phase. In other words, if a sector is fully liberalized in a single phase, the value assigned in this case is 1. But if the liberalization is completed in two phases, then 0.5 is assigned for the first phase and 1 for the second. Similarly, if the liberalization takes place in three phases, then the number assigned is 0.33 for the first phase, 0.66 for the second phase and 1 for the last phase (Shrestha M. B., 2005).

Table 2: Financial Liberalization Trend of Policy Variables in Ethiopia⁴

YEAR	IRD	REB	EAL	IPR	ECC	RRR
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0
1991	0	0	0	0	0	0
1992	0	0	0	0	1	0
1993	0	0	0	0	1	0
1994	0	0.5	0	1	1	0
1995	0	0.5	0	1	1	1
1996	0	0.5	0	1	1	1
1997	0	0.5	0	1	1	1
1998	0.66	0.5	0.5	1	1	1
1999	0.66	0.5	0.5	1	1	1
2000	0.66	0.5	0.5	1	1	1
2001	0.66	0.5	0.5	1	1	1
2002	0.66	0.5	0.5	1	1	1
2003	0.66	0.5	0.5	1	1	1
2004	0.66	0.5	0.5	1	1	1
2005	0.66	0.5	0.5	1	1	1
2006	0.66	0.5	0.5	1	1	1
2007	0.66	0.5	0.5	1	1	0.66
2008	0.66	0.5	0.5	1	1	0.66
2009	0.66	0.5	0.5	1	1	0.66
2010	0.66	0.5	0.5	1	1	0.66
2011	0.66	0.5	0.5	1	1	0.66
2012	0.66	0.5	0.5	1	1	0.66
2013	0.66	0.5	0.5	1	1	1
2014	0.66	0.5	0.5	1	1	1

Note: Number assigned - 0 for none, 1 for full, and 0.33, 0.50 and 0.66 for partial gradual deregulation.

⁴ See Appendix A, for a detail computation of the coding of policy variables

After the construction of the financial liberalization Policy components the eigenvalues and eigenvectors of the correlation matrix of financial liberalization policy variables are calculated using E views 9 are presented as follows:

Table 3: Eigenvalues and Eigenvectors of the Correlation Matrix of Policy Variables

Variable	<i>Eigen vectors</i> (λ_k)		
	(λ_1)	(λ_2)	(λ_3)
IRD	0.397392	0.575813	0.102381
REB	0.428524	-0.264643	-0.14641
EAL	0.397392	0.575813	0.102381
IPR	0.428524	-0.264643	-0.14641
ECC	0.386959	-0.404829	0.754272
RRR	0.408849	-0.181443	-0.606
<i>Eigen values</i> (λ_k)	2.44764	0.036068	0.060214

Source: Author's Computation of the E views result

Taking the first principal component (λ_1), which accounts for 96 percent of the total variance⁵, in the six policy variables and substituting the respective eigenvalues for α_i 's in equation (3.1):

$$FLI_t = 0.397392IRD_t + 0.428524 REB_t + 0.397392 EAL_t + 0.428524 IPR_t + 0.386959 ECC_t + 0.408849RRR_t + \dots\dots\dots(4.2)$$

The index for the individual policy components are calculated by substituting the values for IRD, REB,EAL,IPR,,ECC and RRR, in equation (4.2) from Table 4 and multiplying by the respective values of (α_i). The financial liberalization index for each year is derived by summing up the calculated values of all the eight policy components for the respective year. The calculated individual and total index are presented in the Table 5

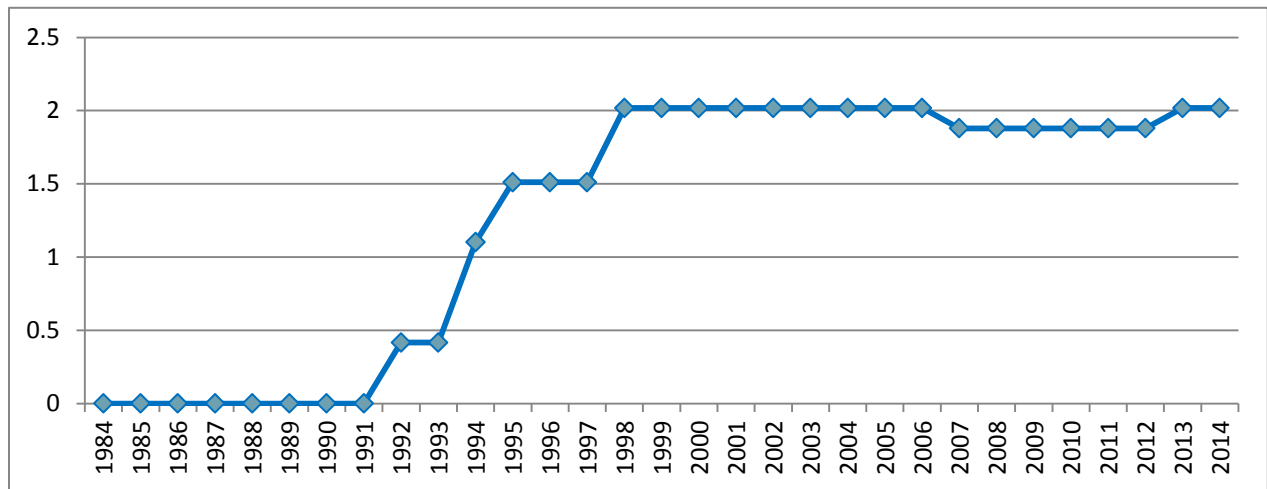
⁵ $\sum\lambda_k = 2.44764 + 0.036068 + 0.060214 = 2.543922$ $\lambda_1 = 2.44764 / 2.543922 = 0.96$

Table 4: Financial Liberalization Index (FLI) for Ethiopia

Year	IRD	REB	EAL	IPR	ECC	RRR	FLI
1984	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0.416456	0	0.416456
1993	0	0	0	0	0.416456	0	0.416456
1994	0	0.228418	0	0.456835	0.416456	0	1.101709
1995	0	0.228418	0	0.456835	0.416456	0.408849	1.510558
1996	0	0.228418	0	0.456835	0.416456	0.408849	1.510558
1997	0	0.228418	0	0.456835	0.416456	0.408849	1.510558
1998	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
1999	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2000	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2001	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2002	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2003	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2004	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2005	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2006	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2007	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2008	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2009	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2010	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2011	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2012	0.288786	0.228418	0.218778	0.456835	0.416456	0.26984	1.879113
2013	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121
2014	0.288786	0.228418	0.218778	0.456835	0.416456	0.408849	2.018121

The value of the financial liberalization index (FLI) given in the last column of the above table is presented in Figure 8.

Figure 8: Financial Liberalization Index (1984-2014)



Source: Author's Computation

The above figure reveals that the decade of 1992 – 1998 was the main period of the implementation of financial liberalization measures in Ethiopia.

According to (Shrestha M. B., 2005) financial liberalization comprises eight different policy components. The effects of the implementation of these policy components are reflected in the change of certain variables. He justifies the use of the proxies by stating the analysis of the reflection as particularly useful in examining the impact of the individual policy component. Since FLI is unobservable, the policy makers basically use the individual components for the policy changes. Further, the study of the individual components also becomes important regarding the impact evaluation of the financial liberalization. It is assumed that implementation of a policy component would directly bring some change in the respective indicators. In such a case, policy implementation itself means manipulating the indicator.

In this study two of the variables Stock Market Reform (SMR) and Privatization of State-owned Banks (PSB) has been exempted from the study due to their inexistence the movement in the liberalization of the variables and cannot be computed on the software employed to compute their value.

Table 5: Policy Components and Indicators

<i>S.N.</i>	<i>Policy Component</i>	<i>Indicator(s)</i>
1.	Interest Rate Deregulation (IRD)	Interest Rates (deposit, lending, refinance)
2.	Removal of Entry Barriers (REB)	Population density per bank branch
3.	Reduction in Reserve Requirement (RRR)	Statutory liquidity requirement and cash reserve requirement rate
4.	Easing in Credit Controls (ECC)	Bank credit to private sector <i>vis-a-vis</i> the public sector
5.	Implementation of Prudential Rules (IPR)	None
6.	Stock Market Reform (SMR)	Market capitalization value
7.	Privatization of State-owned Banks (PSB)	None
8.	External Account Liberalization (EAL)	Foreign direct investment and balance of payments statistics

Source: (Shrestha M. B., 2005)

The Next sections introduce dependent and explanatory variables related to each hypothesis and present the Unit root test of the variables.

4.3 Unit Root test

In order to determine the degree of integration, a unit root test is carried out using the standard Augmented Dickey-Fuller (ADF). Moreover in applying ARDL model all the variables entered in the regression should not be integrated of order two. To check these conditions, unit root test is conducted before any sort of action taken. Even though the ARDL framework does not require per-testing variables to be done, the unit root test could convenient to check whether or not the ARDL model should be used. The result in Table 4.5 shows that there is a mixture of $I(0)$ and $I(1)$ but not any order two.

Table 6: Unit Root result of the variables

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	FLI	N	S	I[1] at 1%	N	S	I[1] at 1%
2	LCDR	N	S	I[1] at 1%	N	S	I[1] at 1%
3	LFD	N	S	I[1] at 5%	N	S	I[1] at 5%
4	LGDP	N	S	I[1] at 5%	N	S	I[1] at 5%
5	LNGDP	N	S	I[1] at 5%	N	S	I[1] at 5%
6	LPBB	N	S	I[1] at 5%	N	S	I[1] at 5%
7	LPBCIA	N	S	I[1] at 5%	N	S	I[1] at 5%
8	LRGDP	S	S	I[0] at 1%	S	S	I[0] at 1%
9	LRR	N	S	I[1] at 1%	N	S	I[1] at 1%
10	LRRO	N	S	I[1] at 1%	N	S	I[1] at 1%
11	LSBCP	N	S	I[1] at 1%	N	S	I[1] at 1%
12	LSBCPP	N	S	I[1] at 1%	N	S	I[1] at 1%
13	LSNGDP	N	S	I[1] at 1%	N	S	I[1] at 1%
14	LTBC	N	S	I[1] at 5%	N	S	I[1] at 5%
15	LTDR	N	S	I[1] at 1%	N	S	I[1] at 1%
16	LVBT	N	S	I[1] at 1%	N	S	I[1] at 1%
17	LVBTP	N	S	I[1] at 1%	N	S	I[1] at 1%
18	IRR	N	S	I[1] at 1%	N	S	I[1] at 1%
19	LSBCG	N	S	I[1] at 1%	N	S	I[1] at 1%
20	RGNS	N	S	I[1] at 5%	N	S	I[1] at 5%

Source: Authors computation of Eview 9 results

Form the above table we can conclude that none of the variables entered in the regression are order two, which are not desire in applying ARDL model. So ARDL co-integration technique proposed by (Pesaran *et al.* 2001) is the most appropriate method for estimation or to check the long run relationship among the variables.

4.4 Model Stability and Diagnostic Test

To check the verifiability of the estimated long run model, some diagnostic test is undertaken. Priority in doing any analysis, we required to check the standard property of the model. In this study we carried a number of model stability and diagnostic checking, which includes Serial correlation test (Brush & Godfray LM test), Normality (Jaque-Bera 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 *et al.*2001). In order to reject or accept the null hypothesis, we can decide by looking the p-values associated with the test statistics. That is the null hypothesis is rejected when the p-value are smaller than the standard significance level (I.e. 5%). All the results indicate they pass the basic diagnostic test as well as In addition to the stability, Diagnostic test and the summery of model selection according to Akaike information criteria presented in Appendix B of the paper.

4.5 Financial sector Widening

Financial liberalization is expected to widen the financial sector. The degree of the financial sector widening is reflected in the volume of bank transactions (VBT). Therefore, in order to analyze the impact of financial liberalization on financial sector widening, a ARDL test is conducted is presented as follows:

Table 7: ARDL(2, 2, 2, 0, 0) Co-integrating And Long Run Result (Dependent Variable :LVBT)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LVBT
 Selected Model: ARDL(2, 2, 2, 0, 0)
 Sample: 1984 2014
 Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LVBT(-1))	-0.289080	0.132152	-2.187477	0.0421
D(LRGDP)	-0.418500	0.302546	-1.383262	0.1835
D(LRGDP(-1))	-0.378020	0.262110	-1.442217	0.1664
D(LPBB)	-0.785894	0.208092	-3.776675	0.0014
D(LPBB(-1))	-0.352085	0.248670	-1.415871	0.1739
D(IRR)	-0.001285	0.000592	-2.168955	0.0437
D(FLI)	0.154918	0.025894	5.982822	0.0000
CointEq(-1)	-0.684589	0.106316	-6.439183	0.0000

Cointeq = LVBT - (0.9285*LRGDP -0.7524*LPBB -0.0019*IRR + 0.2263 *FLI + 2.7667)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDP	0.928535	0.215647	4.305814	0.0004
LPBB	-0.752414	0.150319	-5.005448	0.0001
IRR	-0.001877	0.000898	-2.090374	0.0510
FLI	0.226293	0.029750	7.606432	0.0000
C	2.766740	2.491751	1.110359	0.2815

Source: Authors computation of Eview 9 result

The test statistics in Table 4.6 show that holding other things constant a unit increase in LRGDP(real gross domestic product) increase the LVBT(volume of banks transaction) by 9.2 million and statistically significant at 1percent.This implies the economic growth has a positive impact on financial widening. The financial intermediation takes center in the financial system which the banking sector has the lions share is mostly dominated by the Public Bank which is in line with the ideology of the government.

The LPBB (average population per bank branch) implies holding other things constant a unit decrease in (average population per bank branch) increase the LVBT (volume of banks transaction) by 75 million and statistically significant at 5percent.This result is consistent with previous study conducted by (Shrestha M. B., 2005) and also (Fry M. J., 1988) states branch

proximity has raised national saving ratios substantially in his study of six Asian developing countries.

The IRR (real interest rate) implies holding other things constant a unit decrease in real saving interest rate increase the LVBT (volume of banks transaction) by 18 thousand and statistically significant at 5percent. This result is deviated from previous study of (Shrestha M. B., 2005) though insignificant in his empirical finding it indicate it has a positive association. This association is possibly caused by creation of money by the commercial banks were much higher in post liberalization era which were made visible by the galloping inflation were it remained a problem through 2006-2009 averaging 22% annually as evidenced by NBE database yet the absence of the financial market and high startup capital for a business gave the household no choice but to deposit it in banks this is also encompasses the remittance which according to (Geda, et al, 2011), has a volume of between US \$2 to 4 billion per year (an average of about US\$ 3 billion) based on the NBE and MOFEC Data. This is about the size of Ethiopia's total export and development aid combined. Furthermore, according to the World Bank survey of 2010 indicate majority of the remittance undergone through Remittance companies namely use western union which work hand in hand with all local Banks. The remittance is mostly ended up in a daily expense according to the survey and the from financial products the beneficiaries interested in include saving account, Business loan, University education loan, home mortgage, health or life insurance which is evident that most transactions undergone directly or indirectly through banks.

The coefficient of FLI, which is 0.226293⁶, state that a unit increase in the composite index of the overall financial liberalization, is associated with an increase of 1.25 million birr in real Volume of banks transaction in the long run and statistically significant at 1percent which is consistent with the previous study as well.

The coefficient of ECM_{t-1} is -0.684589, which is statistically significant at 1 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is fast, i.e., 68 percent a year.

⁶ LVBT is in the natural log form while FLI is in the level form. The antilog of 0.226293 is 1.2539

The change in the volume of bank transaction is directly linked with the change in the level of saving and investment the following section examines this association.

4.6 Interest rate saving and investment

One of the main hypothesis of financial reform is the deregulation of the interest rate have an increase of real interest rate impact saving and investment in this section Table 4.7 and Table 4.8 discuss the impact of interest rate on saving and investment respectively.

Table 8: ARDL(2, 2, 2, 0, 0) Co-integrating And Long Run Result (Dependent Variable :LTDR)

ARDL Cointegrating And Long Run Form
Dependent Variable: LTDR
Selected Model: ARDL(2, 2, 2, 0, 0)
Sample: 1984 2014
Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LTDR(-1))	-0.287833	0.132144	-2.178171	0.0429
D(LRGDP)	-0.417851	0.303307	-1.377651	0.1852
D(LRGDP(-1))	-0.379637	0.262712	-1.445069	0.1656
D(LPBB)	-0.787683	0.208726	-3.773771	0.0014
D(LPBB(-1))	-0.354475	0.249376	-1.421449	0.1723
D(IRR)	-0.001279	0.000594	-2.153613	0.0451
D(FLI)	0.155240	0.025946	5.983200	0.0000
CointEq(-1)	-0.685729	0.106414	-6.443997	0.0000

Cointeq = LTDR - (0.9273*LRGDP -0.7526*LPBB -0.0019*IRR + 0.2264*FLI + 2.7761)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDP	0.927270	0.215916	4.294585	0.0004
LPBB	-0.752580	0.150460	-5.001861	0.0001
IRR	-0.001865	0.000898	-2.076174	0.0525
FLI	0.226387	0.029783	7.601169	0.0000
C	2.776145	2.494595	1.112864	0.2804

Source: Authors computation of Eview 9 results

The test statistics in Table 4.7 show that holding other things constant a unit increase in LRGDP(real gross domestic product) increase the LTDR(real time deposit) by 92 million in Birr and statistically significant at 1percent.This implies the economic growth has a positive impact on saving . The result is consistent with the finding of (Reinhart & Tokatlidis, 2001) an increase

in the growth is associated with saving. This association could further be justified with the use of Granger the causality test in table 9. The pairwise causality test indicates the economic growth is leading the saving and has unidirectional causality. This result indicate saving being the function of income less consumption the increase in the income lead to increase in higher saving.

Table 9: Pairwise causality test of saving and economic growth

Pairwise Granger Causality Tests			
Sample: 1984 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DRGDP does not Granger Cause DGDS	29	4.70443	0.0189
DGDS does not Granger Cause DRGDP		1.97743	0.1603

Source: Authors computation of Eview 9 results

The LPBB (average population per bank branch) implies holding other things constant a unit decrease in (average population per bank branch) increase the LTDR (real time deposit) by 75 million and statistically significant at 5percent. implying the increase in saving is attributed to the branches proximity or financial widening has a positive impact in the long term supporting the finding of (Fry M. J., 1988).

The IRR (Average real saving deposit rate) implies holding other things constant a unit decrease in real saving interest rate increase the LTDR (real time deposit) by 1.8 thousand and statistically significant at 1percent. Unlike the other regressors this variable has unexpected sign it also consistent with finding of (Mikessell & Zinser, 1973) arguing interest rate did not affect the propensity to save. The inflow of remittance ending up in saving account, perhaps is caused by the absence of financial product and housing mortgage explain the adverse result of the study. The other main factor is that saving account is pretty much the only financial product that the majorities are aware and use in the country.

The coefficient of FLI, which is 0.249769 states that a 1 unit increase in the composite index of the overall financial liberalization, is associated with an increase of 1.28⁷ million birr in real LTDR (real time deposit) in the long run and statistically significant at 1percent. The result is

⁷ LTDR is in the natural log form, while FLI is in the level form. The antilog of 0.249769 is 1.283728

consistent with (Schmidt-Hebbel & Serven, 2002) who highlight significant and positive relationship between financial reform and saving. Possible implicates for the empirical result is the previous regimes existing legal and institutional framework which deter the private sector to save in the financial intermediaries. (Kahsay, 2014)

The coefficient of ECM_{t-1} is -0.727863, which is statistically significant at 1 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is fast, i.e., 72 per cent a year.

The second part of the hypothesis which is related with positive effect of the real interest rate on investment as indicated in Table 8 implies holding other things constant a unit increase in the LTDR (total real time deposit) is associated with an increase of LTBC (Total bank credit) by 1.13 billion in Birr and statistically significant at 1 percent. This implies there was a high money creation by banks for every unit of deposit made and also consistent with previous study of (Shrestha M. B., 2005);

The LPBB (average population per bank branch) has a positive but statistically insignificant association with LTBC (Total bank credit). The result indicate the deregulation of the banks expansion has insignificant impact on proxy of investment indicating the financial widening is not accompanied by the credit provision of banks to the private sector which is essential for real investment.

While, FLI (financial liberalization index) has a negative but statistically insignificant relationship in the long run with LTBC (Total bank credit). The result signifies as the degree of increase in liberalization does not stimulate investment as stipulated.

The LLR (real lending rate) has a negative and statistically insignificant relationship in the long run. The sign of the coefficient is as expected but doesn't have an impact on proxy of LTBC (Total bank credit). The result is also consistent with (Shrestha M. B., 2005) who suggests such a scenario indicates lending rate does not determine the volume of bank lending. This can happen where there is an extremely high demand for bank loans and the loans are in short supply. Consequently, from the above result, we can conclude that even after the financial reform, the bank loans are still in short supply in the Ethiopian market. The possible causes

in the countries context include compulsory 27% Treasury bill investment of commercial banks on every loan they grant for low interest rate as well as the increase in the reserve requirement from 2007-2012 creates a crowding effect on available credit by the government to the private sector.

Table 10: ARDL(2, 0, 0, 2, 0) Co-integrating And Long Run Result(Dependent Variable: LBTC)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LTBC
 Selected Model: ARDL(2, 0, 0, 2, 0)
 Sample: 1984 2014
 Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LTBC(-1))	0.301916	0.196706	1.534860	0.1405
D(LTDR)	0.536043	0.201360	2.662110	0.0150
D(LPBB)	0.068590	0.157698	0.434946	0.6683
D(LLR)	0.108700	0.084613	1.284660	0.2136
D(LLR(-1))	0.162313	0.093285	1.739967	0.0972
D(FLI)	-0.008009	0.046097	-0.173743	0.8638
CointEq(-1)	-0.472656	0.154714	-3.055040	0.0062

Cointeq = LTBC - (1.1341*LTDR + 0.1451*LPBB -0.2487*LLR -0.0169*FLI -3.8174)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTDR	1.134109	0.225650	5.025955	0.0001
LPBB	0.145116	0.323651	0.448373	0.6587
LLR	-0.248715	0.246846	-1.007572	0.3257
FLI	-0.016945	0.097094	-0.174520	0.8632
C	-3.817399	3.223666	-1.184179	0.2502

Source: Authors computation of Eview 9 results

The coefficient of ECM_{t-1} is -0.472656, which is statistically significant at 1 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 46 per cent a year. Furthermore, the co-integration result unveils LPBB (average population per bank branch); FLI (financial liberalization index) and LLR (real lending rate) have no impact in short term as well.

4.7 Economic growth and industrial development

The Ultimate goal of financial reform is to achieve higher economic growth and industrial development. Table 11 and Table 12 discuss the impact of liberalization in terms of the stated perspectives respectively.

Table 11: ARDL (1, 0, 0, 1, 0) Co-integrating And Long Run Result (Dependent Variable: LGDPP)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LGDPP
 Selected Model: ARDL(1, 0, 0, 1, 0)
 Sample: 1984 2014
 Included observations: 30

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FLI)	0.229409	0.101723	2.255231	0.0339
D(LPBB)	-1.690279	0.589788	-2.865910	0.0087
D(LSBCG)	0.187892	0.065232	2.880348	0.0084
D(LSBCP)	0.199166	0.380806	0.523010	0.6060
CointEq(-1)	-0.450837	0.213966	-2.107051	0.0462

Cointeq = LGDPP - (0.5089*FLI -3.7492*LPBB + 0.6341*LSBCG + 0.4418 *LSBCP + 15.5716)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FLI	0.508853	0.376246	1.352449	0.1894
LPBB	-3.749204	1.288799	-2.909068	0.0079
LSBCG	0.634107	0.299414	2.117828	0.0452
LSBCP	0.441769	0.682502	0.647279	0.5239
C	15.571626	7.984198	1.950306	0.0634

Source: Authors computation of Eview 9 results

The test statistics in Table 11 indicates that holding other things constant the coefficient of FLI, which is 0.508853 states that a unit increase in the composite index of the overall financial liberalization, is associated with an increase of 1.6⁸ thousand birr in LGDPP (per capital of gross domestic product) in the long run but statistically insignificant. Indicating the overall financial reform has no significant impact on the economic growth. This implies the financial reform is not catalyzing the economic growth as predicted by the advocates of financial

⁸ LTDR is in the natural log form, while FLI is in the level form. The antilog of 0.508853 is 1.66338

liberalization after the reform, which need further assessment of the causality of financial development and economic growth.

The LPBB (average population per bank branch) which indicate the financial widening implies holding other things constant a unit decrease in (average population per bank branch) increase LGDPP (per capital of gross domestic product) by 37 thousand and statistically significant at 1percent. The result demonstrate Financial widening has a positive impact on the economic growth.

The LSBCG (Share of Banks credit to Government) implies holding other things constant a unit increase LGDPP (per capital of gross domestic product) by 6.3 thousand and statistically significant at 5 percent. The evidence further shows the economic growth is attributed to the government investment the so called aspiring developmental state could in fact had an impact this is of course could be explained by the volume of credit secured by the government were ended up in the contribution for the economy.

The LSBCP (Share of Banks credit to Private sector) implies holding other things constant a unit increase LGDPP (per capital of gross domestic product) by 4.4 thousand but statistically insignificant. Indicates the portfolio of the loan is dominated by the government holding the largest market share among the financial intermediaries hence the government creates a crowding effect by allocating resource to what it prioritize could justify the findings above.

The coefficient of ECM_{t-1} is 0.450837, or 45 percent of short run disequilibrium converges back to the long run equilibrium. In the short run financial liberalization which has insignificant contribution to the economic growth have a significant positive impact in the short run. However, LSBCP (Share of Banks credit to Private sector) has insignificant impact on the short run.

The impact of the financial liberalization on industry is measured using the real Gross domestic Product of the industry sector as a regressor indicated in Table 4.11 implies holding other things constant a unit increase in the LTBC (Total bank credit) is associated with an increase of LGDPI (Gross domestic Product of the industry) by 1.75 billion in Birr and statistically significant at 1percent. Indicates LTBC (Total bank credit) has a significant impact on the industry sector this is indeed no surprise as the sector involves material amount of credit to operate.

The LFD(financial Depth) is implies holding other things constant a unit increase is associated with increase the LGDPI (Gross domestic Product of the industry) by 2.14 billion in Birr and statistically significant at 1percent.

The IRR (average saving deposit rate) has a positive insignificant association with LGDPI (Gross domestic Product of the industry).while, the composite FLI (financial liberalization index) indicate a negative association with indicating the increase in a degree of financial reform decrease LGDPI (Gross domestic Product of the industry) but statically insignificant relationship in the long run. Indicating less financial resource is mobilized to aid.

Table 12:ARDL(1, 0, 0, 0, 0) Co-integrating And Long Run Result(Dependent variable: LGDPI)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LGDPI
 Selected Model: ARDL(1, 0, 0, 0, 0)
 Sample: 1984 2014
 Included observations: 30

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LTBC)	0.631632	0.189177	3.338848	0.0027
D(LFD)	0.771617	0.251979	3.062231	0.0054
D(FLI)	-0.004081	0.011875	-0.343653	0.7341
D(IRR)	0.001005	0.000535	1.876888	0.0727
CointEq(-1)	-0.360449	0.125767	-2.866005	0.0085

Cointeq = LGDPI - (1.7523*LTBC + 2.1407*LFD -0.0113*FLI + 0.0028*IRR -5.3795)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTBC	1.752347	0.288090	6.082640	0.0000
LFD	2.140710	0.505111	4.238098	0.0003
FLI	-0.011321	0.031430	-0.360199	0.7218
IRR	0.002788	0.001517	1.837489	0.0786
C	-5.379535	1.748727	-3.076258	0.0052

Source: Authors computation of E view 9 results

The coefficient of ECM_{t-1} is -0.360449, which is statistically significant at 1 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 36 per cent a year. Furthermore, the co-integration result shows, FLI (financial liberalization index) and IRR (average saving deposit rate) have no impact in short term as well.

4.8 Financial Deepening

The main theme of this section is to investigate the level of financial development is examined through financial deepening which shows financial development as catalyst to economic growth is presented in Table 13 as follows.

Table 13: ARDL(1, 1, 2, 1, 0, 2) Co-integrating And Long Run Result(Dependent Variable: LFD)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LFD
 Selected Model: ARDL(1, 1, 2, 1, 0, 2)
 Sample: 1984 2014
 Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDPP)	0.105656	0.053150	1.987871	0.0642
D(LPBB)	0.339693	0.236516	1.436237	0.1702
D(LPBB(-1))	0.446005	0.363748	1.226138	0.2379
D(VBTP)	0.148651	0.298985	0.497184	0.6258
D(FLI)	-0.054857	0.038795	-1.414030	0.1765
D(IRR)	0.003333	0.000795	4.192012	0.0007
D(IRR(-1))	-0.002469	0.000632	-3.906334	0.0013
CointEq(-1)	-0.691658	0.140894	-4.909074	0.0002

Cointeq = LFD - (-0.1028*LGDPP -1.1768*LPBB -1.3356*VBTP -0.0793*FLI + 0.0095*IRR + 7.7846)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDPP	-0.102847	0.045485	-2.261088	0.0380
LPBB	-1.176781	0.560664	-2.098907	0.0520
VBTP	-1.335640	0.330139	-4.045686	0.0009
FLI	-0.079312	0.049065	-1.616469	0.1255
IRR	0.009496	0.001206	7.875046	0.0000
C	7.784564	3.050066	2.552261	0.0213

Source: Authors computation of E view 9 results

The test statistics in Table 13 indicates that holding other things constant a unit increase in LGDPP(per capital of gross domestic product) is associated with a decrease in the LFD (financial Depth) by 1 thousand in Birr and statistically significant at 5 percent. Implies in reality the financial depth as shallow it may be has been gradually descending from liberalization to financial restraint in the study period conform argument of (Li D. , 2001) mild financial repression probably had indeed had a favorable effect on economic growth.

The LPBB (average population per bank branch) implies holding other things constant a unit decrease in (average population per bank branch) increase the LFD (financial Depth) by 1.17 million and statistically significant at 5percent the finding further solidify the result of (Fry M. J., 1988) as well. Likewise, The LVBTP (Per capital volume of banks transaction) implies holding other things constant a unit decrease in (per capital volume of banks transaction) i.e. the spread or widening of the volume of transaction throughout the population is associated with an increase the LFD (financial Depth) by 13.3 thousand and statistically significant at 5percent, the finding supports the argument of (Fry M. J., 1988).

The IRR (average saving deposit rate) implies holding other things constant, a unit increase associated with an increase of LFD (financial Depth) by 9.4 thousand in Birr and statistically significant at 1 percent. Indicating the average deposit rate has been contributing to the financial depth in the country positively. Support the hypothesis of (McKinnon, 1973) and (Shaw, 1973) which specifically states that real interest rate is positively associated with financial deepening.

The composite financial liberalization index (FLI) or the overall financial reform has a negative association with LFD (financial Depth) but statistically insignificant. Indicating the degree of financial liberalization so far has been ineffective as a policy alone to bring about the financial development. The result is consistent with previous result of (Shrestha M. B., 2005).

The coefficient of ECM_{t-1} is -0.691658, which is statistically significant at 1 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 69 per cent a year. Furthermore, the co-integration result shows, FLI (financial liberalization index) has no impact on financial development in short term as well.

4.9 Efficiency of Resource Allocation

The proponents of financial liberalization argue financial repression leads to inefficient investment of the financial resource through credit allocation and interest rate discrimination. It is hypothesized that once interest rate is deregulated resource will be allocated efficiently. Table 14 shows the impact of financial liberalization on resource allocation. Hence, the regression result implies holding other things constant a unit increase in LSBCP (Share of banks credit to the private sector) is associated with an increase in the LSNGDP (Share of nonagricultural of

gross domestic product) by 3.5 million Birr and statistically significant at 5 percent. The LPBB (average population per bank branch) indicates a decrease in density per bank increase LSNGDP (Share of nonagricultural of gross domestic product) but statistically insignificant. This result indicates the financial widening has insignificant impact on the resource allocation meaning the financial intermediaries have a shallow portfolio list when it comes to per capital credit as well as signaling the heavy involvement of the government in this sector.

The IRR (average saving deposit rate) implies holding other things constant a unit increase associated with an increase of LSNGDP (Share of nonagricultural of gross domestic product) but statistically significant at 1 percent. The composite financial liberalization index (FLI) i.e. the overall financial reform has a positive association with LSNGDP (Share of nonagricultural of gross domestic product) but statistically insignificant.

Table 14: ARDL(1, 1, 2, 1, 0, 2) Co-integrating And Long Run Result(LSNGDP)

Dependent Variable: LSNGDP
 Selected Model: ARDL(1, 2, 0, 0, 2)
 Sample: 1984 2014
 Included observations: 29

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LSBCP)	0.327866	0.102550	3.197122	0.0047
D(LSBCP(-1))	-0.127111	0.096683	-1.314723	0.2043
D(LPBB)	-0.073573	0.121498	-0.605548	0.5520
D(IRR)	0.000072	0.000536	0.133395	0.8953
D(FLI)	-0.037239	0.033515	-1.111093	0.2804
D(FLI(-1))	-0.053756	0.029957	-1.794458	0.0887
CointEq(-1)	-0.470602	0.207930	-2.263269	0.0355

Cointeq = LSNGDP - (0.3536*LSBCP - 0.1563*LPBB + 0.0002*IRR + 0.0162*FLI + 4.3419)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LSBCP	0.353606	0.142356	2.483960	0.0225
LPBB	-0.156338	0.239028	-0.654057	0.5209
IRR	0.000152	0.001174	0.129532	0.8983
FLI	0.016161	0.055860	0.289315	0.7755
C	4.341882	1.728302	2.512224	0.0212

Source: Authors computation of E view 9 results

The coefficient of ECM_{t-1} is -0.470602, which is statistically significant at 5 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 47 per cent a year. Furthermore, the co-integration result shows, FLI (financial liberalization index), LPBB (average population per bank branch) and IRR (average saving deposit rate) have no impact in short term as well.

4.10 Employment Opportunity

The level of employment depicts the economic status of the country. Advanced economies found to have low unemployment rate. The developing economies are featured with high unemployment rate and often with government policy directed toward increasing the employment opportunities. (Shaw, 1973), affirms stability of growth in output and employment are gains of financial liberalization. (Edwards S. , 1989), argue financial liberalization contributes to welfare through employment. The data on the employment status is not available for the sampled period. Due to this difficulty, the impact of financial liberalization on employment cannot be evaluated directly. Consequently, the association between employment and financial reform is hard to examine directly this research uses credit extended to agriculture, construction, manufacturing, mining, wholesale and retail trade as indicator of employment. These sectors use high human resource in urban area of the country as presented in Table 15.

Table 15: Percentage Distribution of Urban Employment by Industrial Division

Percentage Distribution of Employed Population by Industrial Division / Sectors/	MAY,2009			MAY,2010			MAY,2011		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Manufacturing ,Mining, Quarrying and Construction	21.7	14	7.7	20.6	13.6	6.9	20.9	13.7	7.2
Whole sale and Retail Trade	22.5	11.9	10.6	19.8	10	9.8	21.4	11.3	10.1
Other Service Sectors ⁹	46.3	25.6	20.7	48.5	25	21.5	48.2	25.9	22.3
Agriculture, Hunting, Forestry and Fishing	9.5	6.6	2.9	11.1	7.1	4	9.5	6.1	3.4

Source: CSA. Survey

while the urban population are well covered in the sectors presented in Table 15. The rural area representing 80% of the population and the Gross Domestic Products composition accounts for

⁹**Other Service sectors:** includes Public Administration, Defense, Compulsory Social Security, Education, Health and other Social activities, Hotel and Restaurantetc).

half of the GDP According to Figure 3 during the study period as well as most of the population lives in agricultural practice justify the use of Agricultural sector as a proxy to a means of employment in the rural areas. The association of the sectors selected as key employment generation and the financial reform is examined as follows;

Table 16: ARDL(1, 0, 0, 2, 2) Co-integrating And Long Run Result (LSBCSS)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LSBCSS
 Selected Model: ARDL(1, 0, 0, 2, 2)
 Sample: 1984 2014
 Included observations: 28

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFD)	0.007133	0.005583	1.277804	0.2176
D(LPBB)	-0.605497	0.322153	-1.879532	0.0765
D(IRR)	-0.003840	0.002471	-1.554023	0.1376
D(IRR(-1))	0.005608	0.002622	2.139121	0.0464
D(FLI)	0.124824	0.153968	0.810715	0.4281
D(FLI(-1))	0.175696	0.131526	1.335825	0.1983
CointEq(-1)	-0.371693	0.166354	-2.234343	0.0384

Cointeq = LSBCSS - (0.0192*LFD -1.6290*LPBB -0.0256*IRR + 0.8949 *FLI + 8.4093)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFD	0.019192	0.016301	1.177339	0.2544
LPBB	-1.629025	0.548654	-2.969130	0.0082
IRR	-0.025617	0.014123	-1.813913	0.0864
FLI	0.894924	0.371667	2.407869	0.0270
C	8.409316	2.513361	3.345845	0.0036

Source: Authors computation of E view 9 result

(Shrestha M. B., 2005), point out the measurement being indirect cannot ascertain the effect of financial liberalization nevertheless it can be inferred about the effect hence the measurement in table 16 indicates financial depth and composite financial liberalization have negative association with (LSBCSS)¹⁰ Log of share of Banks credit to selected sector.

The LFD(financial Depth) implies holding other things constant a unit increase is associated with increase the LSBCSS (Log of share of Banks credit to selected sector) by 191thousand in

¹⁰ LSBCSS indicate credit granted to agriculture, construction, manufacturing, mining, wholesale and retail trade

Birr but statistically insignificant.

The LPBB (average population per bank branch) indicates a decrease in a unit in density per bank increase LSBCSS (Log of share of Banks credit to selected sector) and statistically significant. This result indicates the financial widening has significant impact on the credit granted to the selected sectors implying financial widening (proximity of banks) has aid generate more employment.

The IRR (average saving deposit rate) implies holding other things constant a unit decrease is associated with an increase of LSBCSS (Log of share of Banks credit to selected sector) but statistically insignificant.

The (FLI) composite of financial liberalization index shows a unit increase in the financial liberalization has increased the LSBCSS (Log of share of Banks credit to selected sector) with 2.44¹¹ Birr which indicate the liberalization process have benefited selected sectors assumed to contribute to employment.

The coefficient of ECM_{t-1} is -0.371693, which is statistically significant at 5 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 37 per cent a year.

The finding is consistent with previous study of (Shrestha & Chowdhury, 2007) in terms of financial widening and the overall financial liberalization policy measures. On the Contrary, financial depth has insignificant impact on credit granted to the selected sectors indicating the development of the financial sector in provision of wider choice of services has insignificant contribution to credit granted to the selected sectors.

4.11 Poverty Alleviation and Distribution of Income

One of the main challenges in the emerging economies is the growth is not allied with redistribution of income. The gap between the rich and the impoverished gets wider and wider as the country leaps forward in progress. This may bring a serious socio economic problem, in order to investigate the role of financial liberalization on poverty incidence.

¹¹LSBCC is in the natural log form, while FLI is in the level form. The antilog of 0.894924 is 2.4471

The financial sector may help alleviate poverty by providing credit facilities to the poor. Similarly, moving the financial resources from the urban areas to the rural areas can facilitate the redistribution of income, as majority of the rich people live in the urban areas while the overwhelming majority of the poor live and work in the rural areas. The flow of credit to rural areas may be taken as one of the indicators of the financial sector's role in redistribution of income and poverty alleviation (Acharya, 2003).

Hence, with in the above context the author used the credit granted to the cooperatives as a proxy for the poverty alleviation. This part of the credit is associated mainly with agricultural sector which accounts for half of the country's output in terms of the GDP. To examine the impact financial liberalization of poverty alleviation the following regression has been estimated.

Table 17: ARDL(1, 0, 0, 0, 2) Co-integrating And Long Run Result (Dependent Variable: LSBCC)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LSBCC
 Selected Model: ARDL(1, 0, 0, 0, 2)
 Sample: 1984 2014
 Included observations: 28

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LPBB)	-1.338376	0.338539	-3.953383	0.0008
D(LFD)	0.002844	0.008206	0.346549	0.7325
D(IRR)	-0.000841	0.003511	-0.239485	0.8132
D(FLI)	0.027893	0.233362	0.119525	0.9061
D(FLI(-1))	0.411765	0.192935	2.134217	0.0454
CointEq(-1)	-0.473895	0.169983	-2.787890	0.0114

Cointeq = LSBCC - (-2.8242*LPBB + 0.0060*LFD -0.0018*IRR + 0.5702*FLI + 16.4992)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPBB	-2.824205	0.854340	-3.305716	0.0035
LFD	0.006001	0.018241	0.328951	0.7456
IRR	-0.001774	0.007272	-0.243998	0.8097
FLI	0.570181	0.389285	1.464689	0.1585
C	16.499201	3.672428	4.492723	0.0002

Source: Authors computation of E view 9 result

The LPBB (average population per bank branch) indicates a decrease in 1 unit in density per

bank increase LSBCSS (Log of share of Banks credit to Cooperative) by 282 million Birr and statistically significant. This result indicates the financial widening has significant impact on the credit granted to cooperative sector implying financial widening (proximity of banks) has aid alleviate poverty. The result is also consistent with (Shrestha M. B., 2005) who claim the availability of loan facilities to the poor helps the increase the income generating activities of the poor, and ultimately assists in the redistribution of income. In this way, the increased number of bank branches may also be helpful in poverty reduction.

The LFD(financial Depth) is implies holding other things constant a unit increase is associated with increase the LSBCSS (Log of share of Banks credit to Cooperative) by barely 60 thousand in Birr but statistically insignificant. Indicating the financial depth has immaterial impact on the fight against poverty of the country.

The IRR (average saving deposit rate) implies holding other things constant a unit decrease associated with an increase of LSBCSS (Log of share of Banks credit to Cooperative) but statistically insignificant.

The (FLI) composite of financial liberalization index shows the 1unit increase in the financial liberalization has increased the LSBCSS (Log of share of Banks credit to selected sector) with 1.76¹² million Birr but statistically insignificant. Indicating the overall financial liberalization measure has positive but insignificant contribution to poverty alleviation in the country,

The coefficient of ECM_{t-1} is -0.473895, which is statistically significant at 5 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 47 per cent a year.

4.12 Financial Sustainability

The absence of financial stability in the financial sector makes it unlikely for a country to achieve higher economic growth. One of the hypotheses of financial liberalization is that the financial sector remains vulnerable and instable in a repressed state, due to the sub optimal interest rate, deter efficiency of investment and economic growth. The theory states

¹² LSBCSS is in the natural log form, while FLI is in the level form. The antilog of LSBCSS is in the natural log form, while FLI is in the level form. The antilog of 0.570181 is 1.7685

stability can be brought in with the implementation of liberalization policies. In this context, the following relationship is tested in order to examine the impact of financial liberalization on financial stability.

Table 18: ARDL(2, 1, 0, 0, 0, 0) Co-integrating And Long Run Result (Dependent Variable: LCDR)

ARDL Cointegrating And Long Run Form
 Dependent Variable: LCDR
 Selected Model: ARDL(2, 1, 0, 0, 0, 0)
 Sample: 1984 2014
 Included observations: 28

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LCDR(-1))	0.312306	0.179586	1.739033	0.0982
D(LFD)	0.004151	0.002470	1.680267	0.1093
D(LPBB)	0.031990	0.054639	0.585476	0.5651
D(LRR)	0.041178	0.094454	0.435961	0.6678
D(LRRO)	0.134242	0.067479	1.989389	0.0613
D(FLI)	-0.076388	0.034570	-2.209657	0.0396
CointEq(-1)	-0.715721	0.214112	-3.342738	0.0034

Cointeq = LCDR - (-0.0022*LFD + 0.0447*LPBB + 0.0575*LRR + 0.1876*LRRO -0.1067*FLI + 0.6226)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFD	-0.002248	0.001907	-1.179206	0.2529
LPBB	0.044696	0.076884	0.581343	0.5678
LRR	0.057534	0.127218	0.452249	0.6562
LRRO	0.187562	0.080480	2.330533	0.0309
FLI	-0.106728	0.043854	-2.433688	0.0250
C	0.622578	0.350822	1.774626	0.0920

Source: Authors computation of E view 9 result

A higher credit-deposit ratio might be associated with higher non-performing assets of banks, and this may adversely affect the stability of the financial sector. From this point of view, the above result suggests that the composite financial liberalization index indicate a unit increases in the financial liberalization decrease the likely hood of instability to the financial sector.

LRRO (Log of Repayment Ratio of the loan outstanding) indicate a unit increase in the repayment of the loan increase the stability of the financial sector. This result is consistent with argument of (Zwedu, 2014); who state the NBE loan provision directive force commercial banks

to reduce their Non-Performing Loan (NPL). This has effectively led to behavioral change in the banking system and resulted in stable, sound and profitable banking sector despite the economic challenges both at home and abroad. The level of NPL declined from 6.8% in 2008 to 1.4% at 2012. This is a remarkable performance compared to the trend in SSA, which has been between the range of 6.5 and 9.6% for the same period.

The coefficient of ECM_{t-1} is -0.715721, which is statistically significant at 5 per cent level. This shows that the adjustment process back to the long run equilibrium after a shock is 71 per cent a year.

4.13 Nexus between finance and economic growth

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.

The direction of the causality between financial development and economic growth with a view to examine this issue in the Ethiopian context, the Granger causality test is conducted.

The proxy of economic growth (LGDPP) and the proxy of financial development (LFD) are non-stationary series according to our earlier estimation of unit root test. Thus, Granger causality test requires the variables to be stationary for test, Hence, the first difference of LGDPP and LFD is used to analyses pairwise causality of growth and finance is presented in table 18. Based on the following hypothesis

- Demand following Hypothesis

Ho: $\rho=0$, i.e. DLGDPP does not Granger Cause DLFD

H1: $\rho=1$ i.e. DLGDPP does Granger Cause DLFD

- Supply leading Hypothesis

Ho: $\rho=0$, i.e. DLFD does not Granger Cause DLGDPP

H1: $\rho=1$ i.e. DLFD does Granger Cause DLGDPP

To accept the alternative hypothesis the P-value needed to be with in the critical value of 5% level. Accordingly, there are four possible scenario related to the direction of the causality between LGDPP and LFD, which are:

- i) Unidirectional causality from LFD to LGDPP
- ii) Unidirectional causality from LGDPP to LFD
- iii) Bilateral causality or feedback from each other
- iv) Independence from each other or no causality

The data of the time series are in an annual form. A lag length of 2 has been chosen for the model. The Granger causality test results are given in Table 18 below.

Table 19: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests			
Sample: 1984 2014			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DLGDPP does not Granger Cause DLFD	28	4.19848	0.0279
DLFD does not Granger Cause DLGDPP		1.20754	0.3172

Source: Authors computation of Eview 9 result

The above result implies the F statistics of the first equation proved the existence of demand following hypothesis in Ethiopia during the study period. Economic growth granger causes financial development when Financial Development (LFD) is used as a proxy variable for financial development. The finding is consistent with (Odhiambo N. M., 2008); (Muhammad & Muhammad, 2010). The result is in line with the earlier estimation of economic growth indicates the private sector credit as a proxy for financial development is insignificant whereas the credit to the government sector has apposite significant impact indicating earlier on the demand following hypothesis. The estimation on the financial deepening solidify the result that after the early age of financial liberalization the government imposes various measures to restrain from further liberalization as indicated on the financial liberalization index (FLI) since 1996 the financial reform has been in latent in producing further Deregulation instead from 2007-2012 has actually resulted in a slight repression in comparison to earlier years of the reform this is mainly due to the rise in reserve requirement, introduction of The NBE treasury bill and increase in startup capital of the financial intermediaries among many. The result indicated financial

restraint actually contributed to the economic growth is in line with the finding of (Li D. , 2001) in the Chinese case that financial restraint actually aided the economic growth and stabilize the financial sector in the early stages of economic growth.

CHAPTER FIVE

CONCLUSION AND FUTURE RESEARCH DIRECTION

In the first section of this Chapter, major empirical findings of the study are summarized and conclusions are outlined; the second section discusses their policy implications. Finally, the third section presents further studies direction.

5.1. Empirical finding and Policy implications

The financial liberalization increased financial sector widening through proximity of bank branches significantly impacting economic growth. The variations in real interest rate have no impact on the saving. This indicates the depositors are depositing money regardless of the loss in the value of money deposited exceeds it is benefit. This result is also consistent with finding of (Mikessell & Zinser, 1973); the possible cause is the absence of alternative financial product.

The estimation result of the investment indicate there is a shortage in supply of credit and the composite financial liberalization policy index indicates the overall financial reform measures have an adverse consequence on investment supporting the argument of (Tsegabirhan , 2010) that Ethiopian banking industry being underfinanced constrained by it is size cannot be expected to finance major infrastructural projects as well as expanding basic service needs.

While the overall financial reform doesn't have an impact on economic growth it is found credit to the government has significant impact on growth signaling the dominancy of the government on the financial sector. Further supports the finding of (Zwedu, 2014), most of the finance (over 70%) has been going to the state and state-owned enterprises while less than 30% of the finance has been going to the private sector.

Although the association between the overall financial reform and industrial development has insignificant negative association indicating the financial policy measures collectively have adverse insignificant effect on industrial development, both financial depth and total banks credit has shown positive and significant impact on industrial development. The result is also consistent with the argument of (Zwedu, 2014), the share of the new loan disbursement to real sector (agriculture, industry, housing and construction) increased. This reflects the shift in loan from trade and other short-term loans towards the production sector.

Financial deepening has been further restrained as indicated in the result the increase in the economic growth, volume of per capita bank transaction and the collective financial liberalization measures have adverse impact on the financial development during the study period indicating that mild financial repression probably had a favorable effect on economic growth.

The financial liberalization has positive but insignificant association with efficiency in allocating financial sources which is measured by the increase in nonagricultural GDP indicate the overall financial reform has insignificant positive impact, this is due to the fact that most of the financial sectors credit goes to the government than the private sector which is an efficiency indicator in this study.

The contribution of financial sector after the deregulation has a mixed result on welfare. In terms of catalyzing the employment opportunity financial widening and the overall liberalization policy measure have played a positive role while the financial depth has no significant impact on employment creation. Implying the financial development has insignificant impact on sectors contributing to employment.

The population per bank branch has a positive association with the volume of the bank credit to the poor but the overall measures of the financial liberalization have positive insignificant result showing early signs of the financial sector could actually have a negative net benefit subsequent to eradication of subsidies in interest rate and freedom of banks to extend credit to high returning projects privileged by the liberalization could actually decrease the flow of financial resource to the poor. Hence, in order to increase the flow of financial resource to the poor additional measure needed to be put side by side with implementation of financial liberalization.

The result of the study suggests the overall financial liberalization measure actually decrease the likelihood of financial instability. The private sector led to a major shift of the focus of the public banks towards profit oriented approach through restructuring and granting full operational autonomy recapitalizing and cleaning their balance sheet from non-performing loan accumulated in the previous socialist regime directed credit delivery system. Furthermore, the result supports the argument of (Zwedu, 2014) that the NBE loan provision directive forces commercial banks to reduce their Non-Performing Loan (NPL). This has effectively led to behavioral change in the

banking system and resulted in stable, sound and profitable banking sector despite the economic challenges both at home and abroad.

The causality of the economic growth on financial development has long been debated by the financial liberalization advocates with a belief that financial liberalization can facilitate economic growth. The direction of causality has been debatable as well in this study the result indicates the direction of causality goes from economic growth to financial development proving the demand leading hypothesis. The result portrays the heavy involvement of government in the financial sector actually was the cause of economic growth during the study period.

5.2 Direction for Future Research

This study only considered the effect of financial liberalization on growth, welfare and financial stability. Due to time constraint and data limitations issues concerning welfare has been represented indirectly hence the welfare aspect need further study. Furthermore, the following areas are therefore recommended for further research.

- I. Using the financial liberalization index to establish its effect on Government Expenditure.
- II. Analyzing the opportunity cost of not liberalizing the economy
- III. Assess the sequencing of financial liberalization
- IV. Evaluate the appropriate metaphor for the institutional framework for present and future liberalization.
- V. Using the index, to study the impact of financial liberalization on other key macro-economic variables like Taxation, Imports and Exports.
- VI. To analyze the effect of financial sector liberalization using structural analysis
- VII. Since liberalization is not a one-time policy measure, inclusion of other policy variables as may have been deregulated at that time of the study is hoped to improve the results.

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APPENDIX A

Computation of the Financial Liberalization Policy Variables

Interest Rate Liberalization

Deposit rates and lending rates are separately considered, in coding this measure, in order to look at the type of regulations for each set of rates. They are coded as being government set or subject to a binding ceiling (code=0), fluctuating within a band (code=1) or freely floating (code=2). The coding is based on the following description:

FL=4 [2, 2] Fully Liberalized if both deposit interest rates and lending interest rates are determined at market rates.

LL = 3 [2, 1] Largely Liberalized when either deposit rates or lending rates are freed but the other rates are subject to band or only a part of interest rates are determined at market rates.

PR= 2/1 [2, 0] [1, 1][1, 0] Partially Repressed when either deposit rates or lending rates are freed but the other interest rates are set by government or subject to ceiling/floor; or both deposit rates and lending rates are subject to band or partially liberalized; or either deposit rates or lending rates are subject to band or partially liberalized.

FR= 0 [0, 0] Fully Repressed when both deposit rates and lending rates are set by the government or subject to ceiling/floor

Set or subject to a binding ceiling (code=0), Fluctuating within a band (code=1) and Freely floating (code=2)

Table 20: Major liberalization measures on interest Rate during the Study Period

Year	Liberalization Measures on Interest Rate
1995	Setting ceiling and floor interest rate for lending and deposit
1998	Liberalization of lending rate
2001	Minimum interest rate reduced from 6 percent to 3 percent
2007	Minimum interest rate raised from 3 percent to 4 percent
2010	Deposit interest rate fully liberalized except 5 percent interest rate ceiling for saving and time deposit Directives №NBE/INT/2010

Source: (Kahsay, 2014) citing (Gardachew, 2012) and Authors compilation from NBE proclamations and Directives

Based on the measures Described Above in Table A.1 the following index has been computed

YEAR	IRD	IRD in %
1984	0	0
1985	0	0
1986	0	0
1987	0	0
1988	0	0
1989	0	0
1990	0	0
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0	0
1998	1	0.66
1999	1	0.66
2000	1	0.66
2001	1	0.66
2002	1	0.66
2003	1	0.66
2004	1	0.66
2005	1	0.66
2006	1	0.66
2007	1	0.66
2008	1	0.66
2009	1	0.66
2010	1	0.66
2011	1	0.66
2012	1	0.66
2013	1	0.66
2014	1	0.66

Note: since the value assigned by the (Abiad & Mody, 2008) ranges from 0-2 the value assumed to have three phases of liberalization hence, 1 above approximately portrays the second stage or 66% of liberalization.

Removal of Banking Sector Entry

1) To what extent does the government allow foreign banks to enter into a domestic market?

This question is coded to examine whether a country allows the entry of foreign banks into a domestic market; whether branching restrictions of foreign banks are eased; to what degree the equity ownership of domestic banks by nonresidents is allowed.

- Coded as 0 when no entry of foreign banks is allowed; or tight restrictions on the opening of new foreign banks are in place.
- Coded as 1 when foreign bank entry is allowed, but nonresidents must hold less than 50 percent equity share.
- Coded as 2 when the majority of share of equity ownership of domestic banks by nonresidents is allowed; or equal treatment is ensured for both foreign banks and domestic banks; or an unlimited number of branching is allowed for foreign banks.

2) Does the government allow the entry of new domestic banks?

- Coded as 0 when the entry of new domestic banks is not allowed or strictly regulated.
- Coded as 1 when the entry of new domestic banks or other financial institutions is allowed into the domestic market.

3) Are there restrictions on branching? (0/1)

- Coded as 0 when branching restrictions are in place.
- Coded as 1 when there are no branching restrictions or if restrictions are eased.

4) Does the government allow banks to engage in a wide range of activities?

- Coded as 0 when the range of activities that banks can take consists of only banking activities.
- Coded as 1 when banks are allowed to become universal banks.

Table 21 Express the timing of Liberalization Measures on Banking Entry

Year	Liberalization Measures on Banking Entry
1994	<ul style="list-style-type: none">• Licensing and Supervision of banking Business Proclamation №. 84/1994, enacted

Source: (Kahsay, 2014) citing (Gardachew, 2012) and Authors compilation from NBE proclamations and Directives

Based on the above parameters stated and the fact on table 21 the following table 22 has been computed

Table 22 Alteration of the coding rule of banking entry

YEAR	Entry of foreign bank	Entry of New Domestic bank	Restriction on Branching	Restriction on Banking Activity	REB	REB in %*
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0
1991	0	0	0	0	0	0
1992	0	0	0	0	0	0
1993	0	0	0	0	0	0
1994	0	1	1	0	2	0.5
1995	0	1	1	0	2	0.5
1996	0	1	1	0	2	0.5
1997	0	1	1	0	2	0.5
1998	0	1	1	0	2	0.5
1999	0	1	1	0	2	0.5
2000	0	1	1	0	2	0.5
2001	0	1	1	0	2	0.5
2002	0	1	1	0	2	0.5
2003	0	1	1	0	2	0.5
2004	0	1	1	0	2	0.5
2005	0	1	1	0	2	0.5
2006	0	1	1	0	2	0.5
2007	0	1	1	0	2	0.5
2008	0	1	1	0	2	0.5
2009	0	1	1	0	2	0.5
2010	0	1	1	0	2	0.5
2011	0	1	1	0	2	0.5
2012	0	1	1	0	2	0.5
2013	0	1	1	0	2	0.5
2014	0	1	1	0	2	0.5

Table 23: The criterion for the conversion of the REB value

Status of the liberalization	Value base on (Abiad & Mody, 2008)	Values converted to REB in %
Fully Liberalized	4 or 5	80%-100%
Largely Liberalized	3	75%
Partially Repressed	1 or 2	25%-50%
Fully Repressed	0	0

Note the above Table 22 REB value has been converted using the criteria stated in table 23

Reduction on Reserve Requirement

- 1) Are reserve requirements restrictive?
 - Coded as 0 if reserve requirement is more than 20 percent.
 - Coded as 1 if reserve requirements are reduced to 10–20 percent or complicated regulations to set reserve requirements are simplified as a step toward reducing reserve requirements
 - Coded as 2 if reserve requirements are less than 10 percent.

Table 24 Liberalization Measures Reduction of Reserve Requirement

Year	Liberalization Measures Reduction of Reserve Requirement
1995	SBB/6/1995 Reserve requirement of 5% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit
1996	SBB/14/1996 Reserve requirement of 5% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit
2007	SBB/42/2007 Reserve requirement of 10% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit
2008	SBB/45/2008 Reserve requirement of 15% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit
2012	SBB/46/2012 Reserve requirement of 10% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit
2013	SBB/55/2013 Reserve requirement of 5% of all birr and foreign currency deposit liability held in the form of Demand (current) deposits saving Deposit and time deposit

Source: Authors compilation from NBE proclamations and Directives

Table 25 : Shows the Measures on Reduction of Reserve requirement

YEAR	RRR	RRR in %
1984	0	0
1985	0	0
1986	0	0
1987	0	0
1988	0	0
1989	0	0
1990	0	0
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	2	1
1996	2	1
1997	2	1
1998	2	1
1999	2	1
2000	2	1
2001	2	1
2002	2	1
2003	2	1
2004	2	1
2005	2	1
2006	2	1
2007	1	0.66
2008	1	0.66
2009	1	0.66
2010	1	0.66
2011	1	0.66
2012	1	0.66
2013	2	1
2014	2	1

Source: Authors computation

Table 26: The criterion for the conversion of the RRR value

Status of the liberalization	Value base on (Abiad & Mody, 2008) code	Values converted to RRR in %
Fully Liberalized	2	100%
Largely Liberalized	1	66%
Partially/Fully Repressed	0	0-33%

Note the above Table 25 RRR value has been converted using the Criterion on Table 26

External Account Transactions

- 1) Is the exchange rate system unified? (0/1)
 - Coded as 0 when a special exchange rate regime for either capital or current account transactions exists.
 - Coded as 1 when the exchange rate system is unified.
- 2) Does a country set restrictions on capital inflow? (0/1)
 - Coded as 0 when significant restrictions exist on capital inflows.
 - Coded as 1 when banks are allowed to borrow from abroad freely without restrictions and there are no tight restrictions on other capital inflows.
- 3) Does a country set restrictions on capital outflow? (0/1)
 - Coded as 0 when restrictions exist on capital outflows.
 - Coded as 1 when capital outflows are allowed to flow freely or with minimal approval restrictions.

By adding these three items, Fully Liberalized = [3], Largely Liberalized = [2], Partially Repressed = [1], Fully Repressed= [0]

Table 27: Liberalization Measures on External Account

Year	Liberalization Measures on External Account
1992	Devaluation ETB by 141 percent against USD
1993	Auction based foreign exchange rate system introduced
1998	Current account fully liberalized Establishment of interbank foreign exchange market and interbank money market

Source: (Kahsay, 2014) citing (Gardachew,2012) and Authors compilation from NBE proclamations and Directives

Table 28: shows the Measures on External Account Liberalization

Year	Exchange rate unified	Restriction on capital in flow	Restriction on capital outflow	EAL	EAL in %
1984	0	0	0	0	0
1985	0	0	0	0	0
1986	0	0	0	0	0
1987	0	0	0	0	0
1988	0	0	0	0	0
1989	0	0	0	0	0
1990	0	0	0	0	0
1991	0	0	0	0	0
1992	0	0	0	0	0
1993	1	0	0	1	0
1994	1	0	0	1	0
1995	1	0	0	1	0
1996	1	0	0	1	0
1997	1	0	0	1	0
1998	1	1	0	2	0.5
1999	1	1	0	2	0.5
2000	1	1	0	2	0.5
2001	1	1	0	2	0.5
2002	1	1	0	2	0.5
2003	1	1	0	2	0.5
2004	1	1	0	2	0.5
2005	1	1	0	2	0.5
2006	1	1	0	2	0.5
2007	1	1	0	2	0.5
2008	1	1	0	2	0.5
2009	1	1	0	2	0.5
2010	1	1	0	2	0.5
2011	1	1	0	2	0.5
2012	1	1	0	2	0.5
2013	1	1	0	2	0.5
2014	1	1	0	2	0.5

Source: Authors computation

By adding these three items we can level the level of financial reform as, Fully Liberalized = [3], Largely Liberalized = [2], Partially Repressed = [1], Fully Repressed = [0]

Table 29: The criterion for the conversion of the EAL value

Status of the liberalization	Value base on (Abiad & Mody, 2008) code	Values converted to EAL in %
Fully Liberalized	3	100%
Largely Liberalized	2	34%-66%
Partially Repressed	1	33%
Fully Repressed	0	0

Note that the above scenario creates a conflicting idea that the External account feature for that reason as independent referee (Bascom, 1994) definition as well as the previous computation of (Shrestha M. B., 2005) has been referred and used in this case.

APPENDIX B

1. Financial sector Widening

1.1 Key Regression statistics

R ²	0.998164
Durbin Watson Statistics	2.382749
F-statistic (P-value)	1523.415(0.000000)

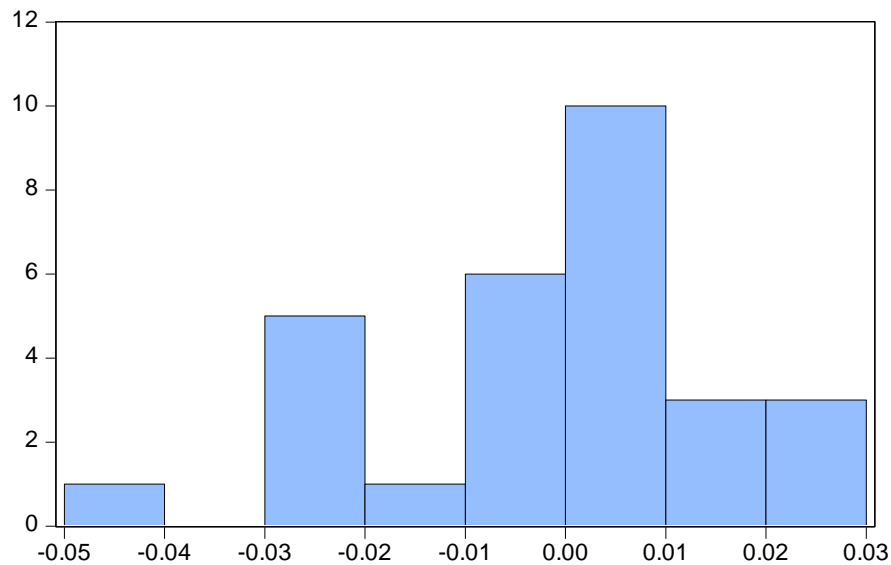
1.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.742305	Prob. F(2,16)	0.4917
Obs*R-squared	2.462376	Prob. Chi-Square(2)	0.2919

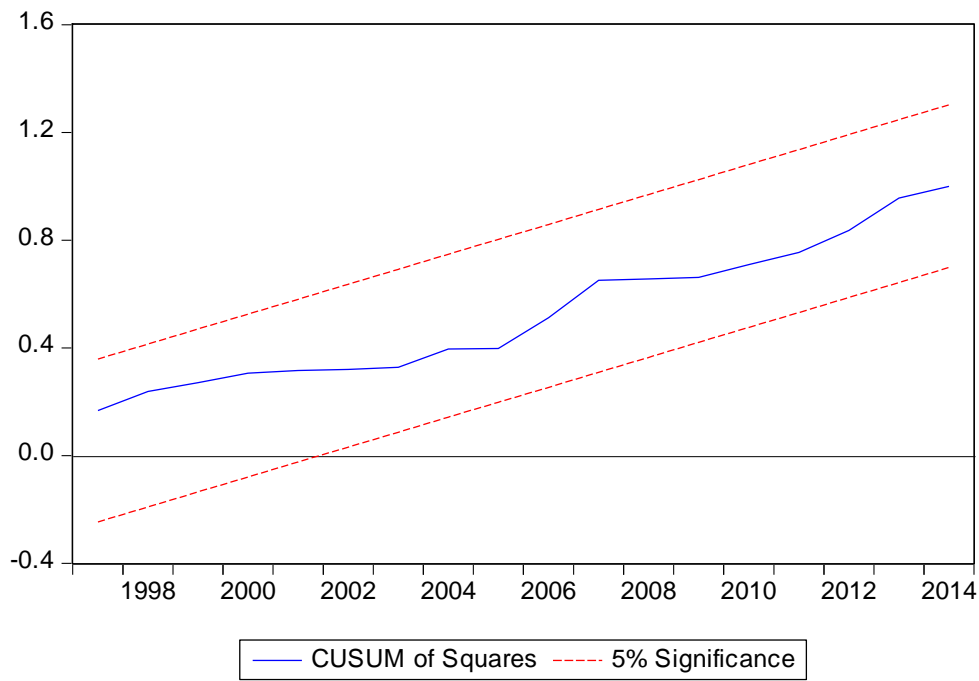
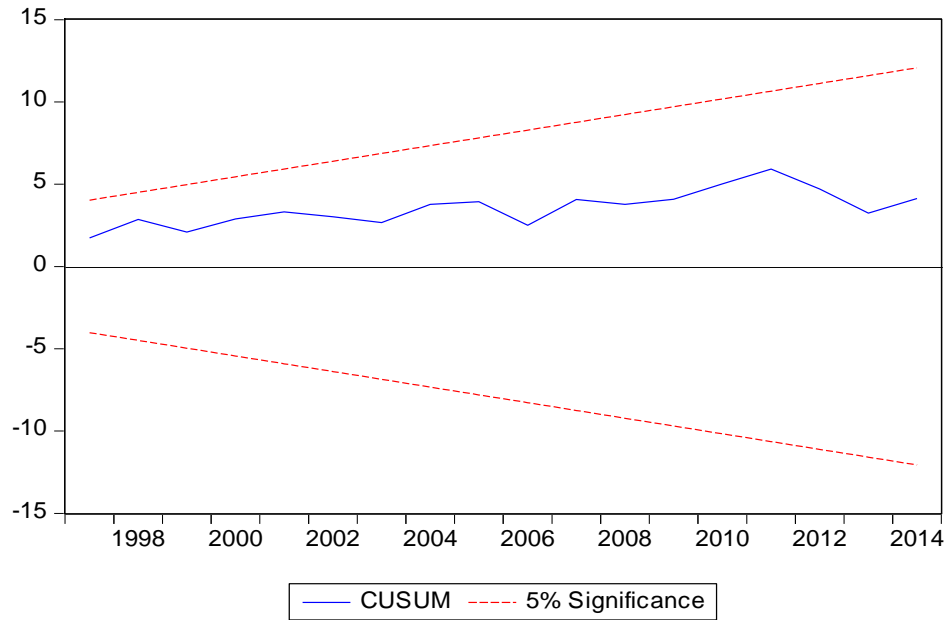
Heteroskedasticity Test: ARCH

F-statistic	2.351512	Prob. F(1,26)	0.1372
Obs*R-squared	2.322357	Prob. Chi-Square(1)	0.1275

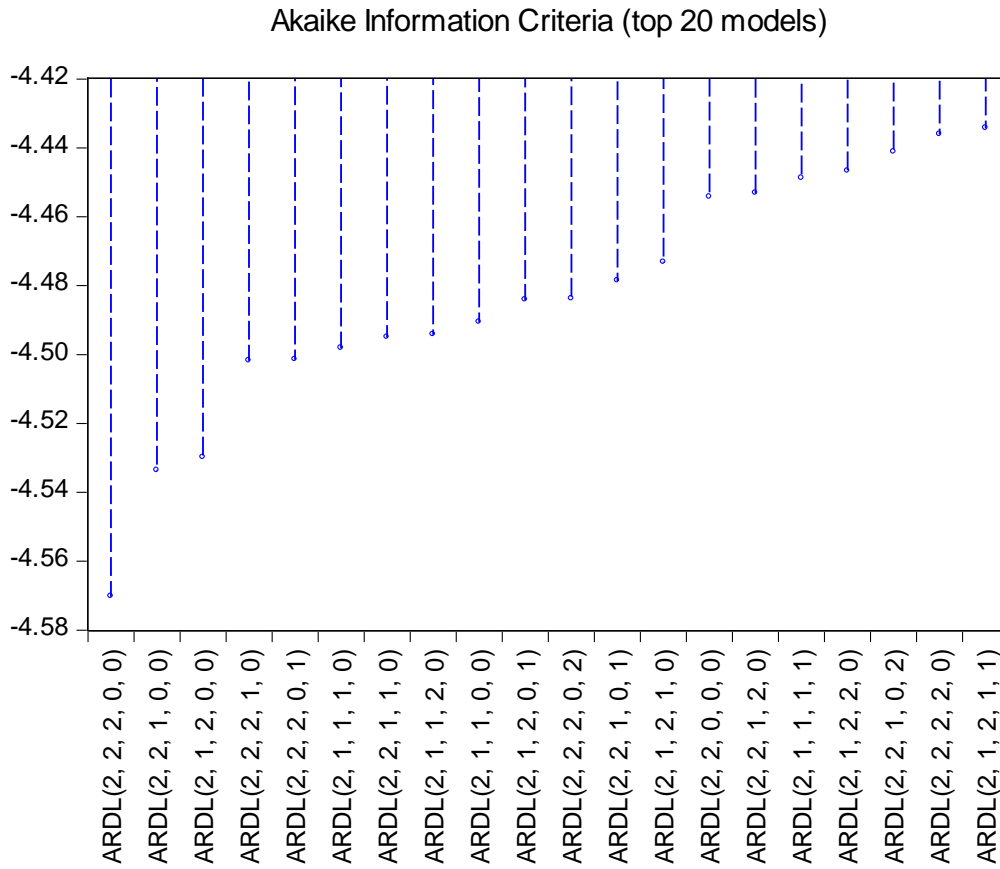


Series: Residuals	
Sample 1986 2014	
Observations 29	
Mean	-1.37e-15
Median	0.002818
Maximum	0.028748
Minimum	-0.045078
Std. Dev.	0.017149
Skewness	-0.616043
Kurtosis	3.048353
Jarque-Bera	1.837120
Probability	0.399093

1.3 Plot of CUSUM and CUSUMQ(Stability test)



1.4 Model selection summary



2. Interest Rate and Saving

2.1 Key Regression statistics

R ²	0.998154
Durbin Watson Statistics	2.383145
F-statistic (P-value)	1514.900 (0.000000)

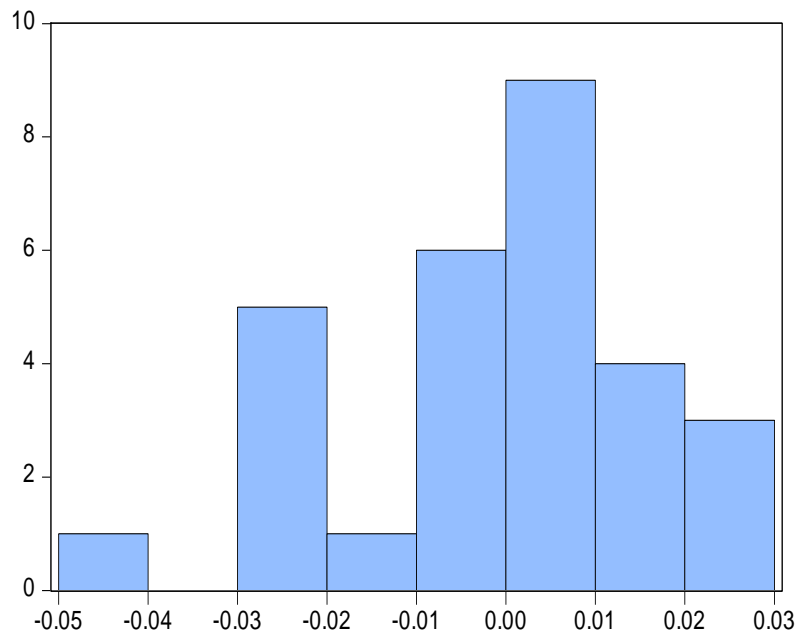
2.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.744909	Prob. F(2,16)	0.4905
Obs*R-squared	2.470279	Prob. Chi-Square(2)	0.2908

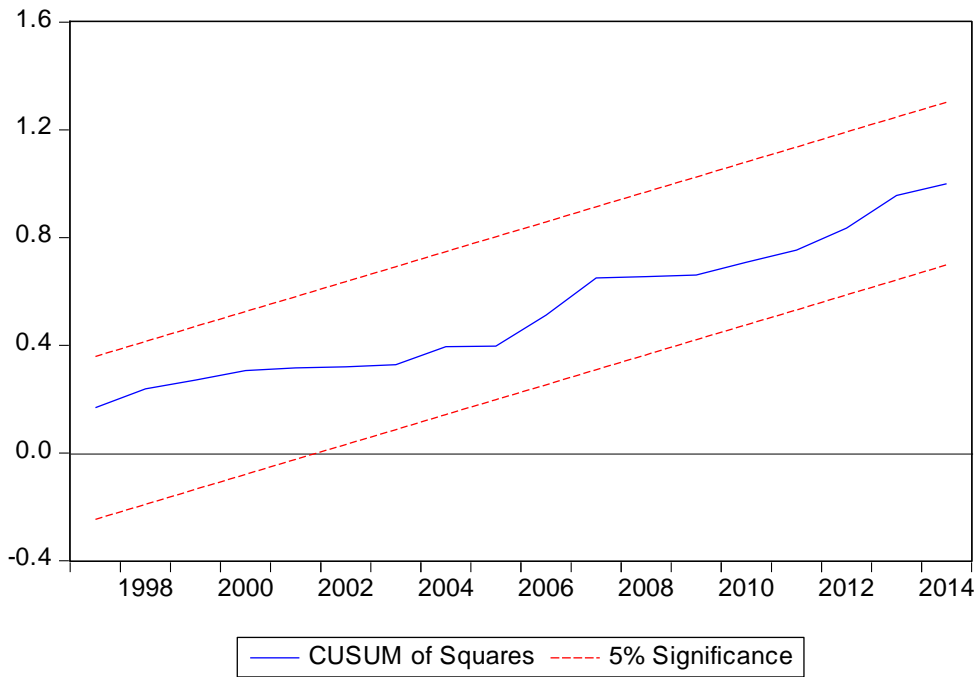
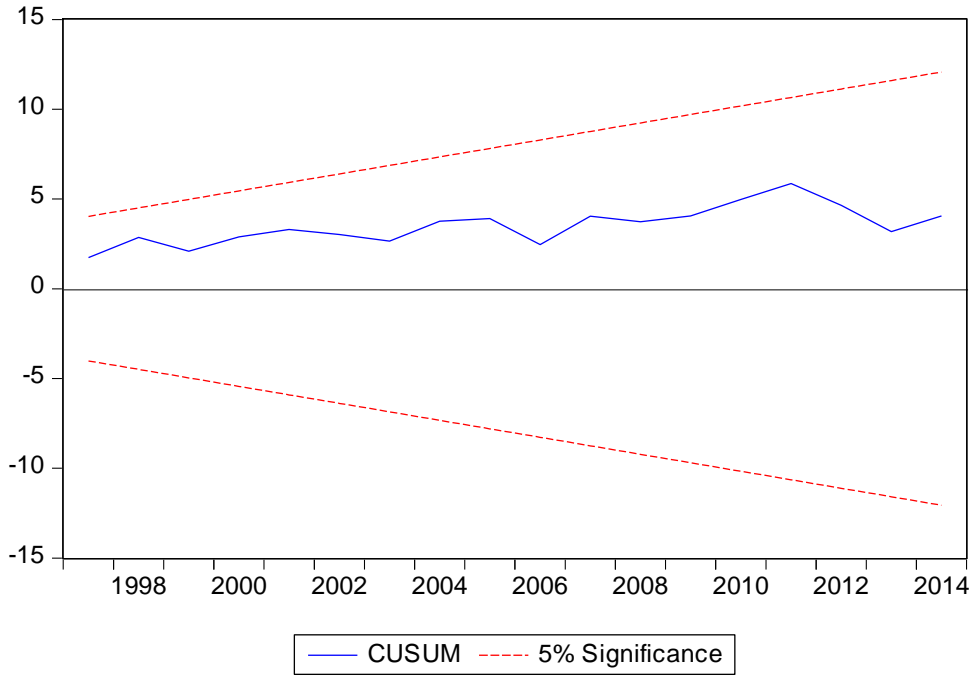
Heteroskedasticity Test: ARCH

F-statistic	2.341657	Prob. F(1,26)	0.1380
Obs*R-squared	2.313429	Prob. Chi-Square(1)	0.1283

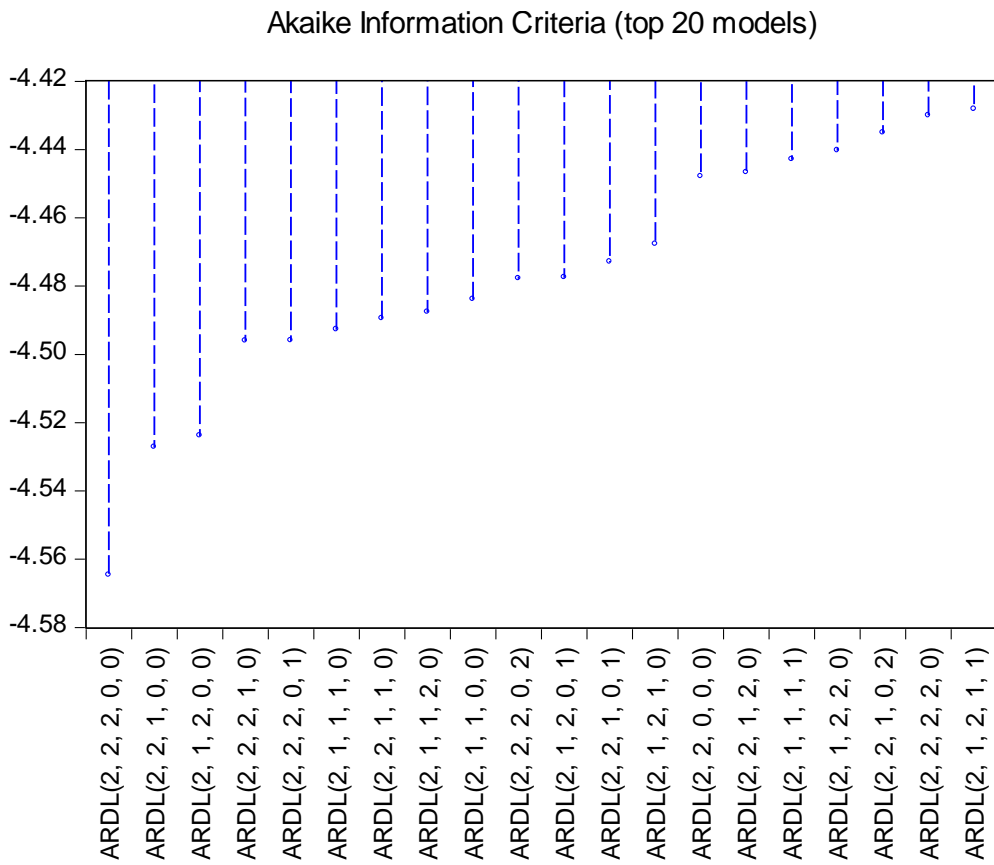


Series: Residuals	
Sample 1986 2014	
Observations 29	
Mean	-1.61e-16
Median	0.002726
Maximum	0.028845
Minimum	-0.045245
Std. Dev.	0.017197
Skewness	-0.619836
Kurtosis	3.053115
Jarque-Bera	1.860360
Probability	0.394483

2.3 Plot of CUSUM and CUSUMQ(Stability test)



2.4 Model selection summery



3. Interest rate and investment

3.1 Key Regression statistics

R ²	0.997080
Durbin Watson Statistics	2.092703
F-statistic (P-value)	1196.268(0.000000)

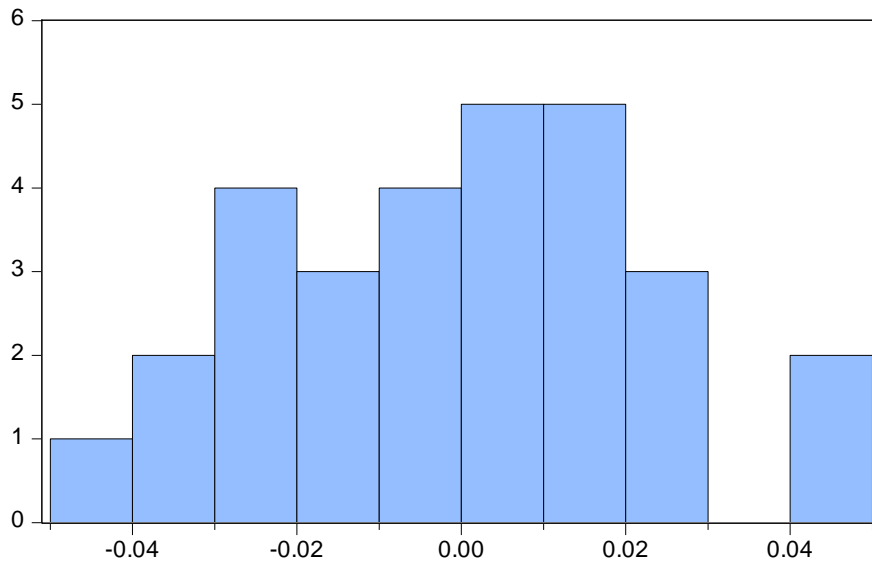
3.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.172041	Prob. F(2,18)	0.8433
Obs*R-squared	0.543957	Prob. Chi-Square(2)	0.7619

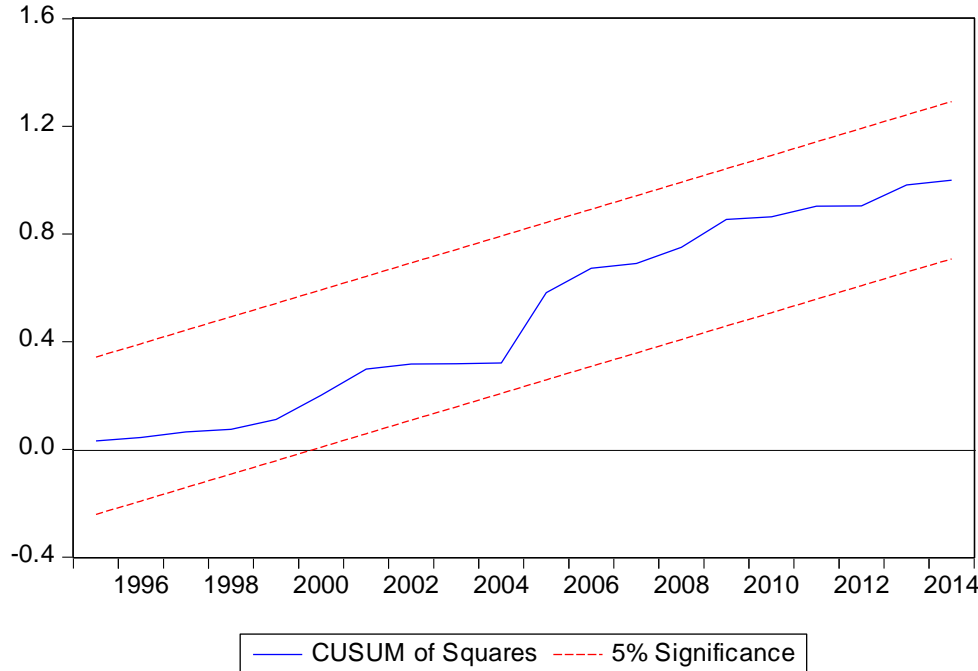
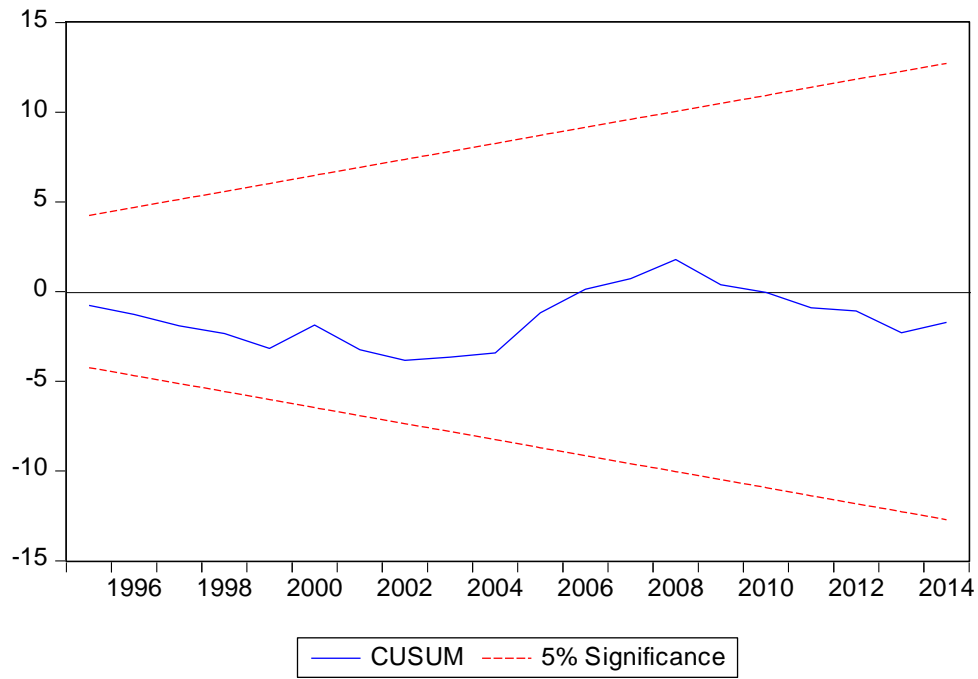
Heteroskedasticity Test: ARCH

F-statistic	2.831273	Prob. F(1,26)	0.1044
Obs*R-squared	2.749641	Prob. Chi-Square(1)	0.0973



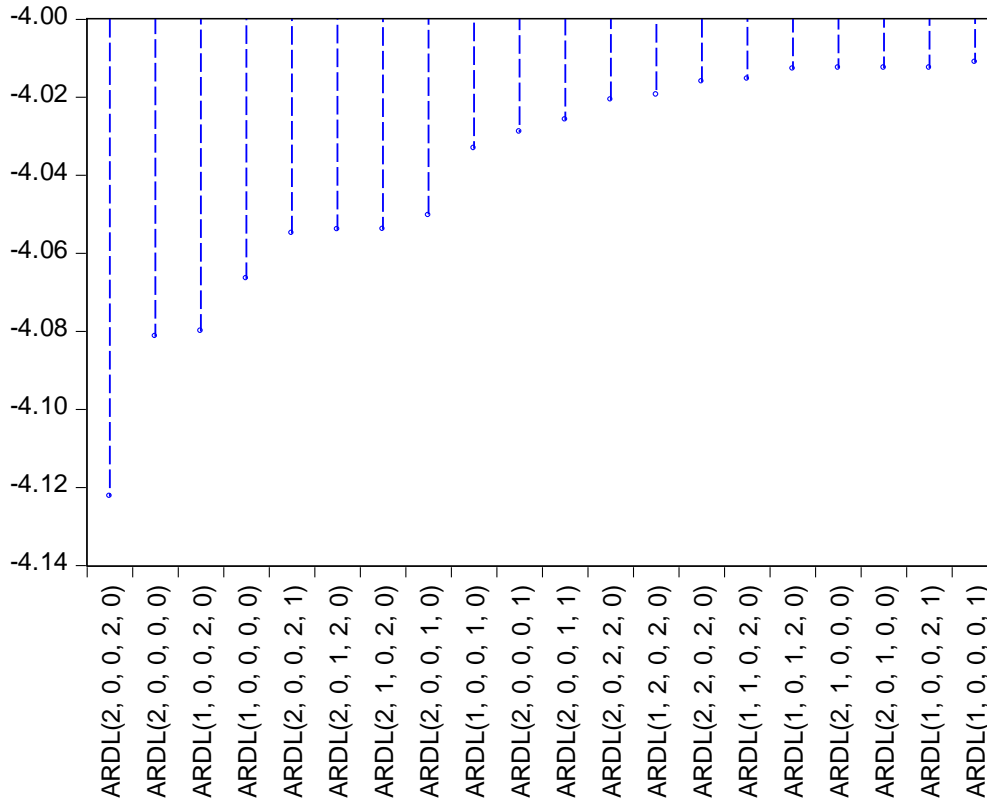
Series: Residuals	
Sample 1986 2014	
Observations 29	
Mean	1.12e-15
Median	0.000116
Maximum	0.048459
Minimum	-0.043822
Std. Dev.	0.022986
Skewness	0.112395
Kurtosis	2.498949
Jarque-Bera	0.364413
Probability	0.833429

3.3 Plot of CUSUM and CUSUMQ(Stability test)



3.4 Model selection summary

Akaike Information Criteria (top 20 models)



4. Economic Growth

4.1 Key Regression statistics

R ²	0.993328
Durbin Watson Statistics	1.890948
F-statistic (P-value)	720.5737 (0.000000)

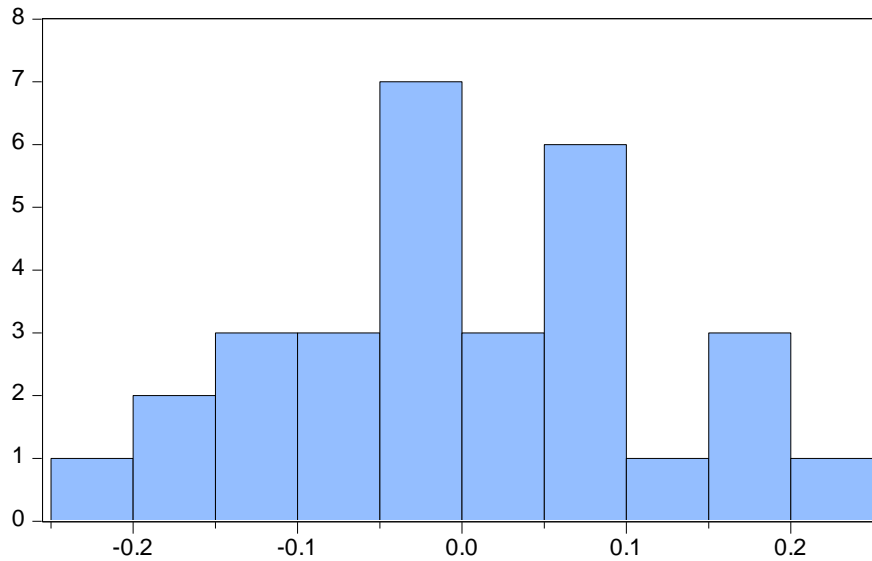
4.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.768708	Prob. F(2,21)	0.1950
Obs*R-squared	4.324925	Prob. Chi-Square(2)	0.1150

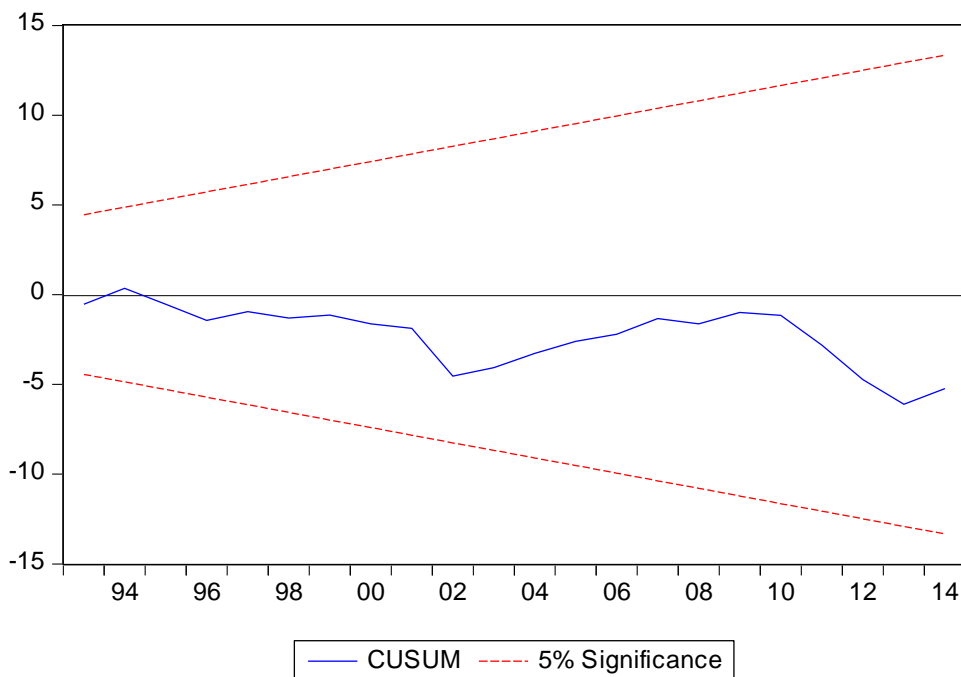
Heteroskedasticity Test: ARCH

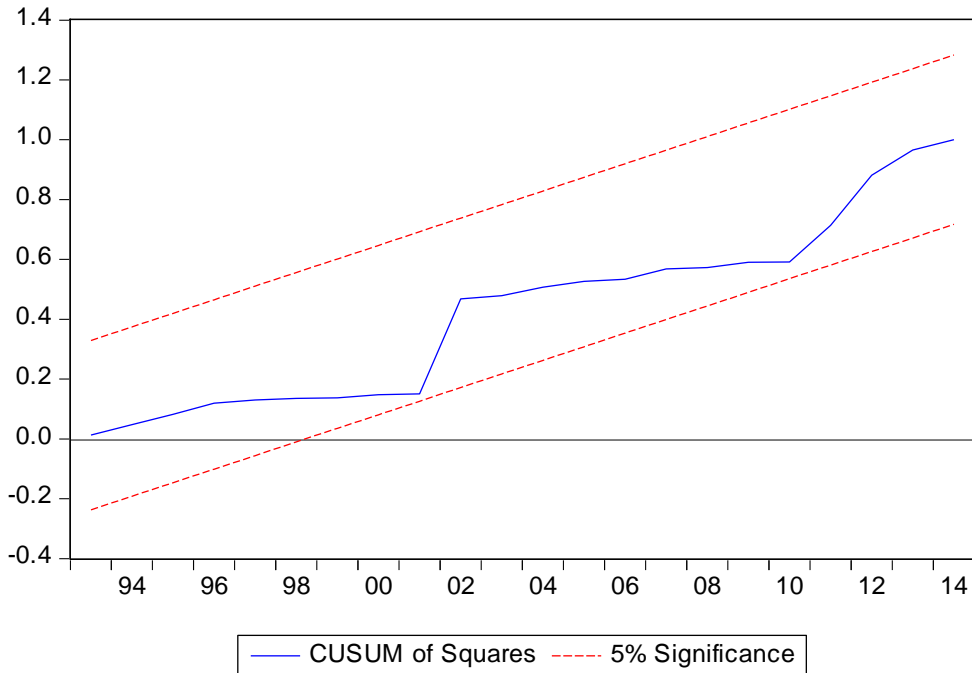
F-statistic	1.971808	Prob. F(1,27)	0.1717
Obs*R-squared	1.973726	Prob. Chi-Square(1)	0.1601



Series: Residuals	
Sample 1985 2014	
Observations 30	
Mean	-2.32e-16
Median	-0.009897
Maximum	0.228383
Minimum	-0.228280
Std. Dev.	0.109700
Skewness	0.024275
Kurtosis	2.476729
Jarque-Bera	0.345212
Probability	0.841469

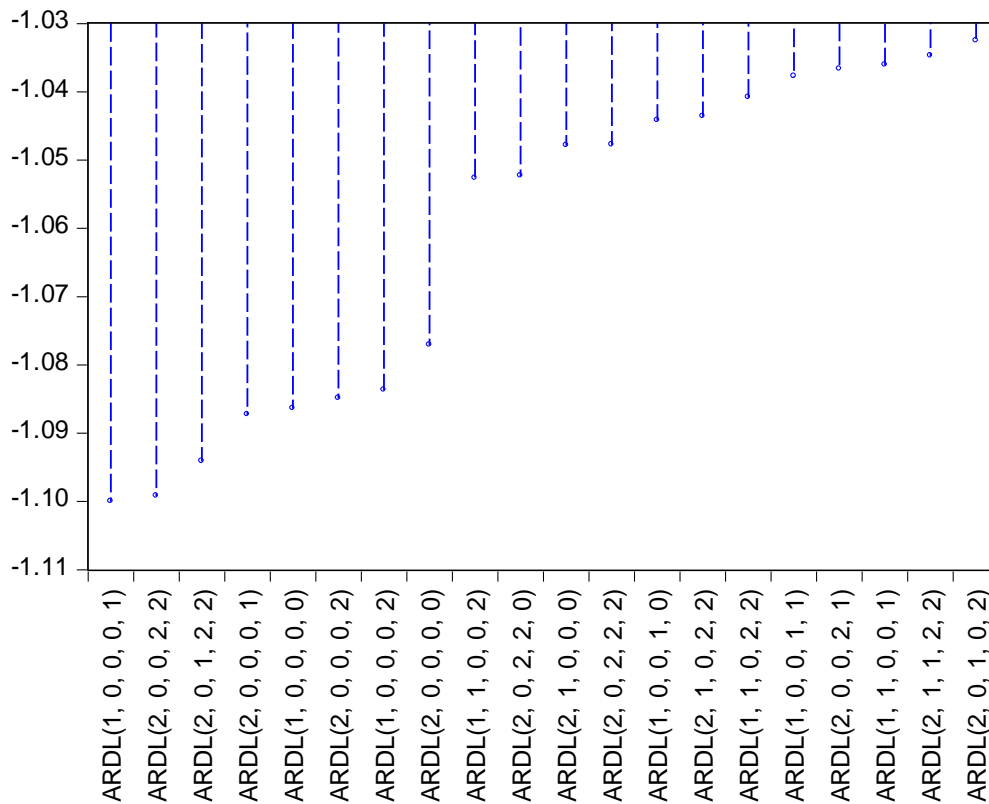
4.3 Plot of CUSUM and CUSUMQ(Stability test)





4.4 Model selection summary

Akaike Information Criteria (top 20 models)



5. Industrial Development

5.1 Key Regression statistics

R ²	0.988259
Durbin Watson Statistics	1.783902
F-statistic (P-value)	489.1903 (0.000000)

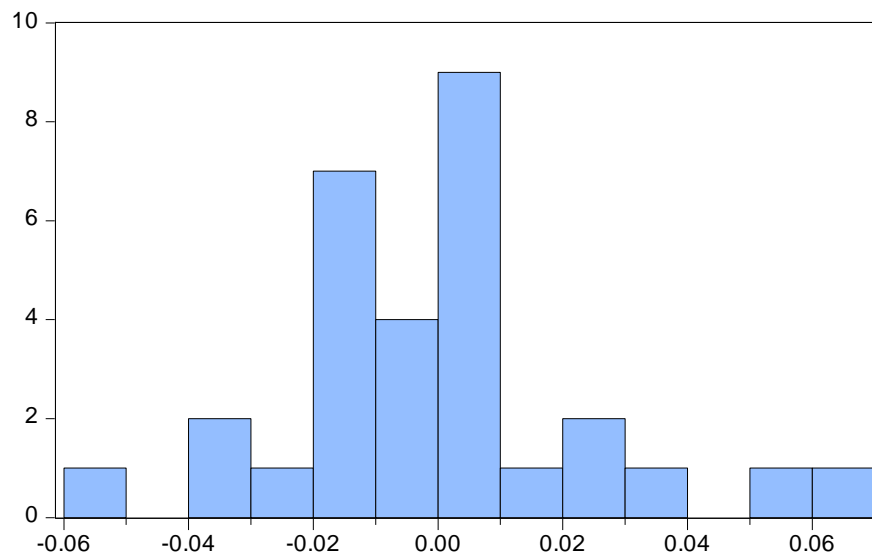
5.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.057141	Prob. F(2,22)	0.9446
Obs*R-squared	0.155034	Prob. Chi-Square(2)	0.9254

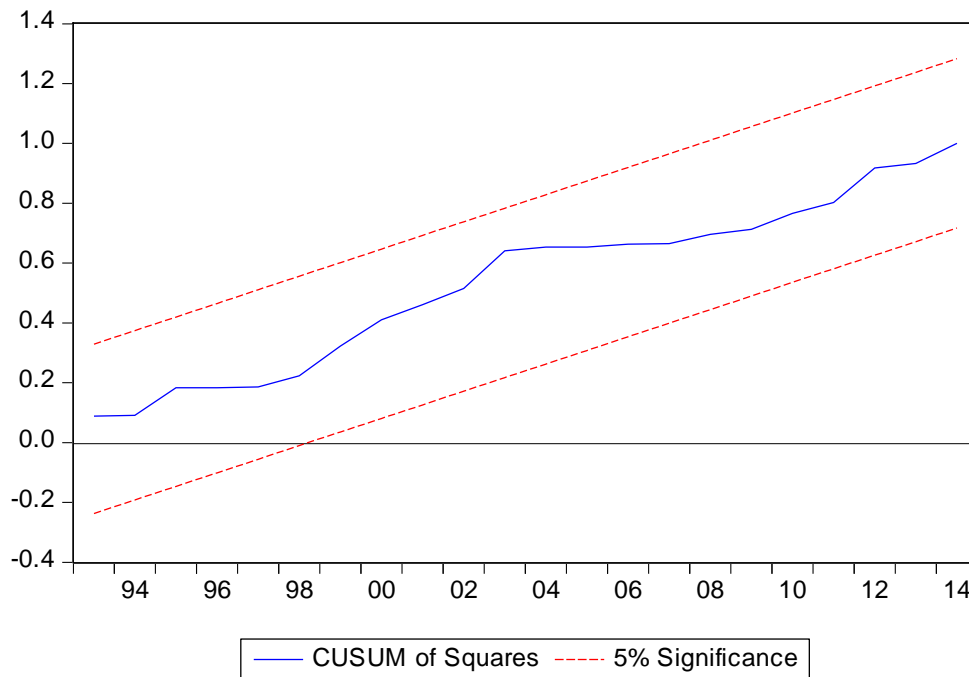
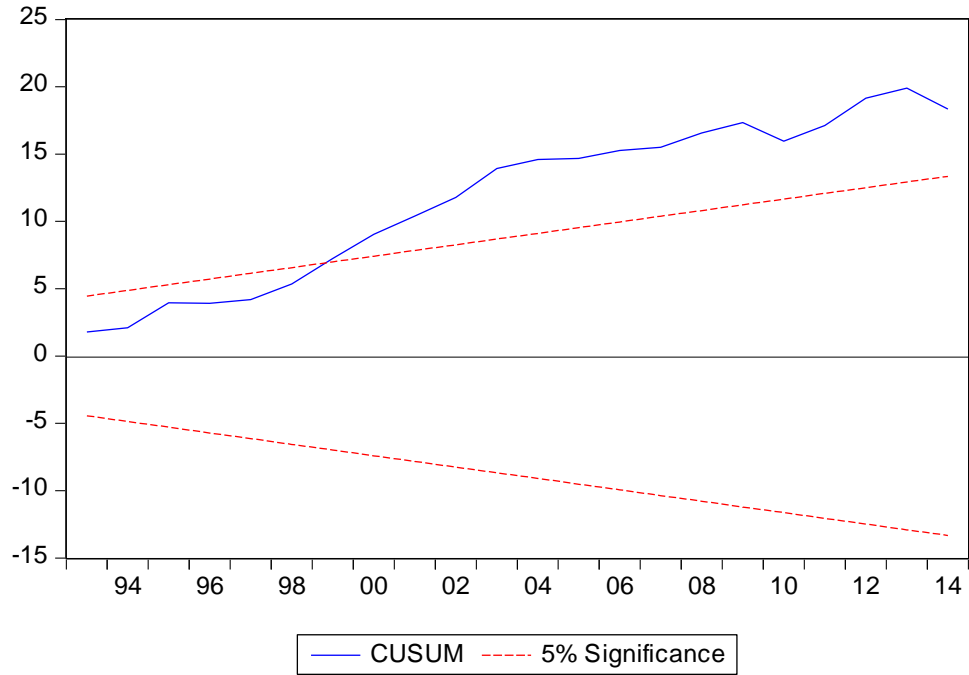
Heteroskedasticity Test: ARCH

F-statistic	1.767277	Prob. F(1,27)	0.1948
Obs*R-squared	1.781574	Prob. Chi-Square(1)	0.1820

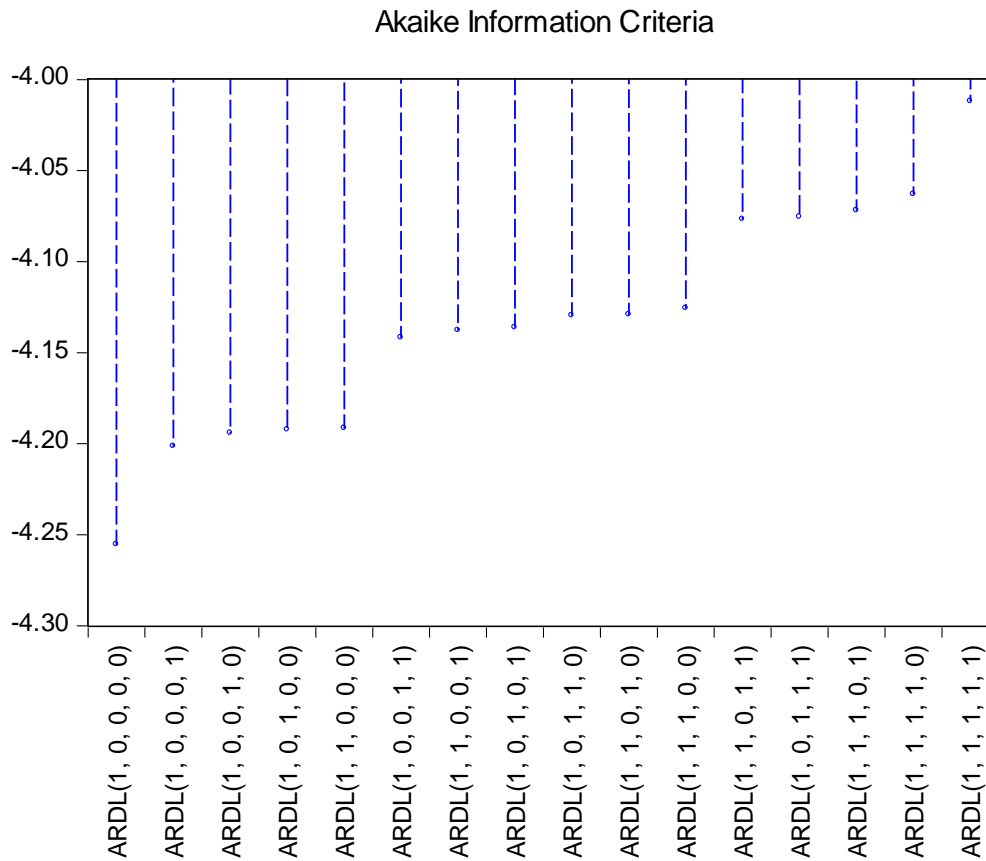


Series: Residuals	
Sample 1985 2014	
Observations 30	
Mean	-5.87e-17
Median	-0.000466
Maximum	0.060572
Minimum	-0.051277
Std. Dev.	0.024000
Skewness	0.517860
Kurtosis	3.653816
Jarque-Bera	1.875240
Probability	0.391559

5.3 Plot of CUSUM and CUSUMQ(Stability test)



5.4 Model selection summary



6. Financial development

6.1 Key Regression statistics

R ²	0.994060
Durbin Watson Statistics	2.082400
F-statistic (P-value)	391.5141(0.000000)

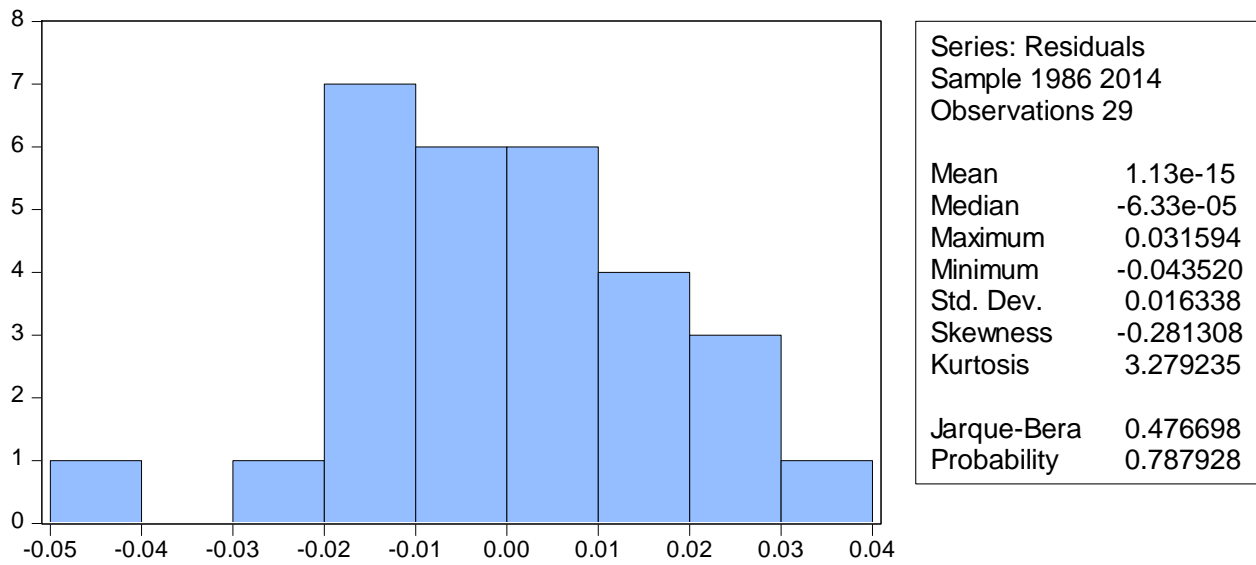
6.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

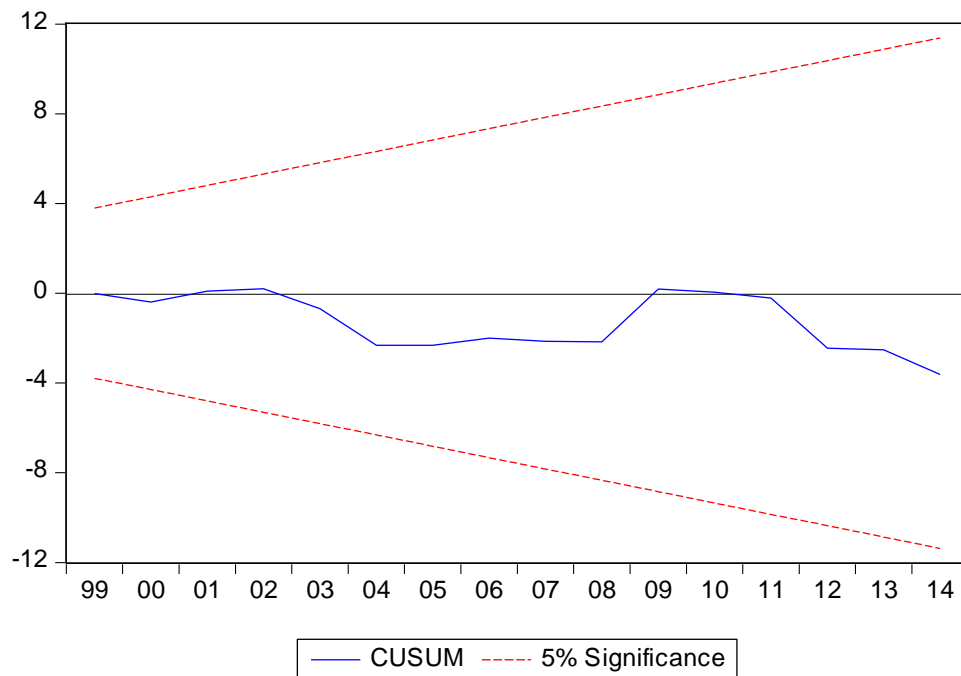
F-statistic	0.617142	Prob. F(2,14)	0.5535
Obs*R-squared	2.349586	Prob. Chi-Square(2)	0.3089

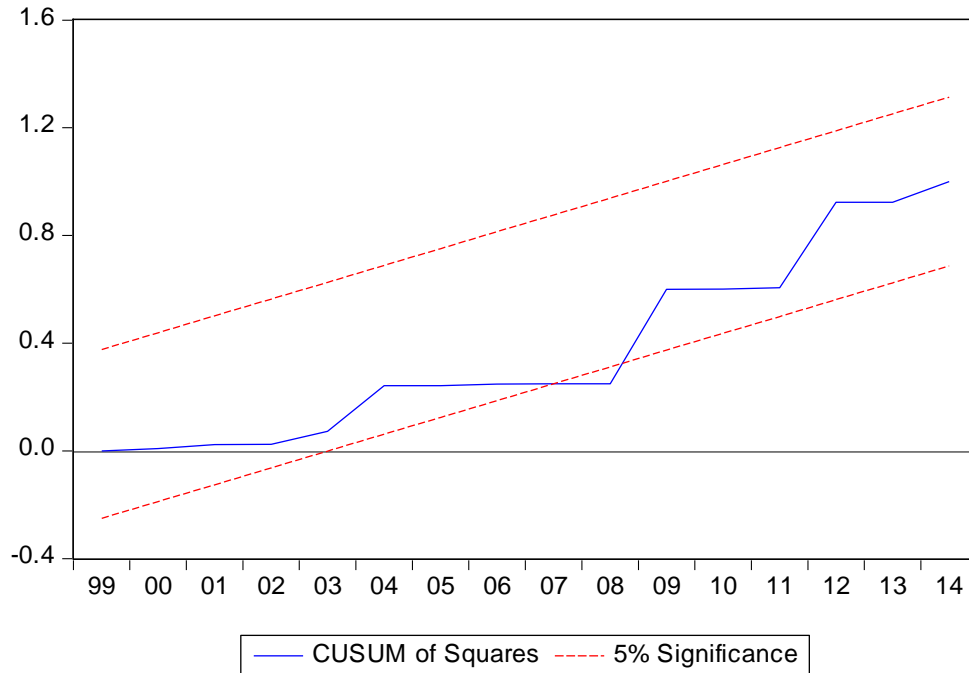
Heteroskedasticity Test: ARCH

F-statistic	0.245490	Prob. F(1,26)	0.6244
Obs*R-squared	0.261901	Prob. Chi-Square(1)	0.6088



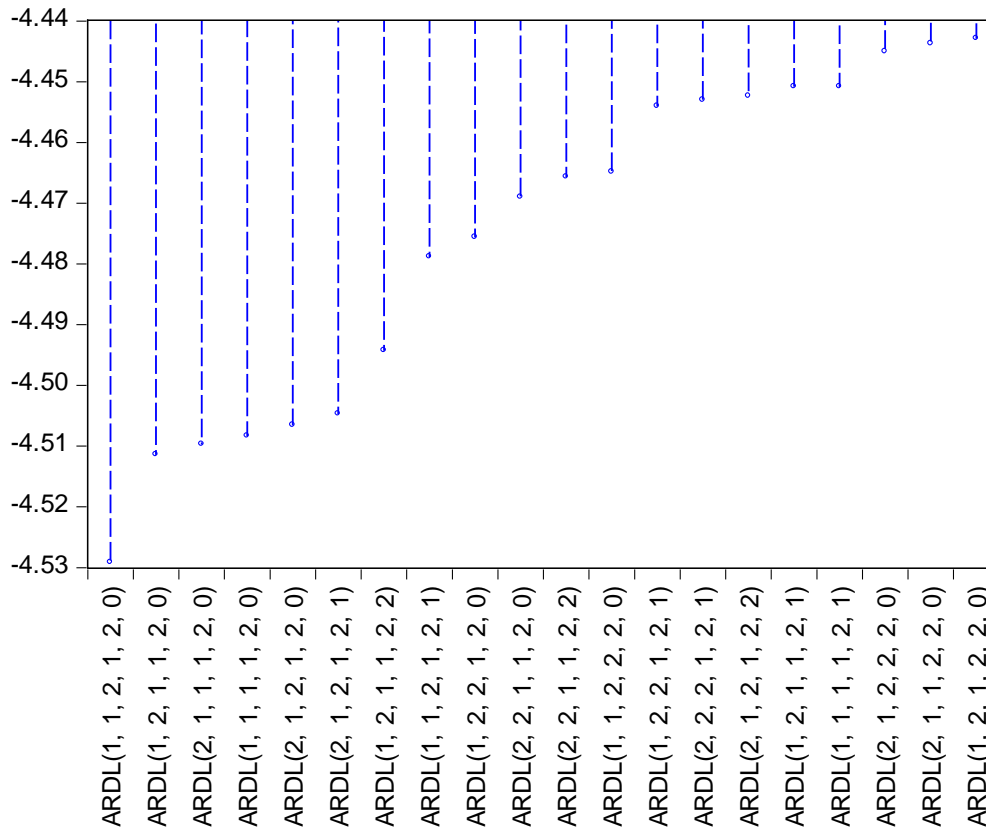
6.3 Plot of CUSUM and CUSUMQ(Stability test)





6.4 Model selection summery

Akaike Information Criteria (top 20 models)



7. Efficiency of Resource Allocation

7.1 Key Regression statistics

R ²	0.992035
Durbin Watson Statistics	1.981372
F-statistic (P-value)	388.4824 (0.000000)

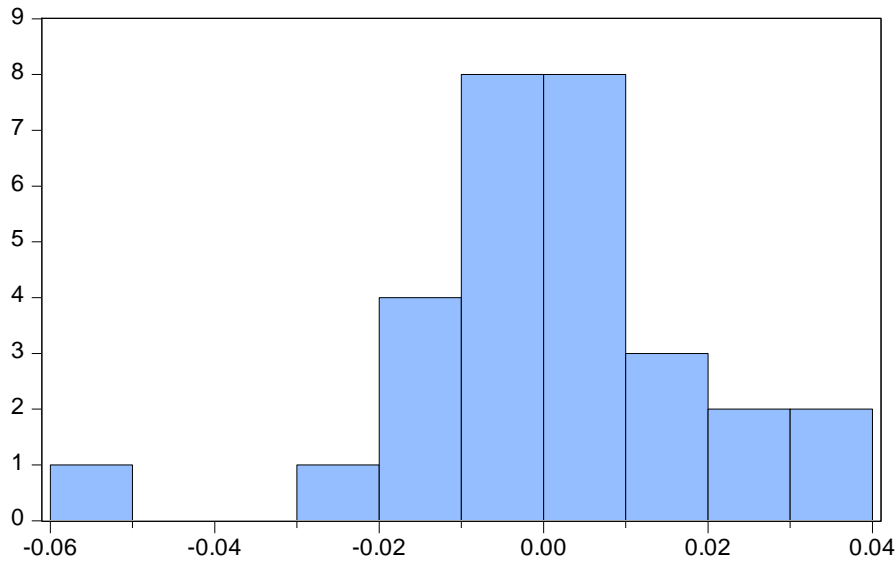
7.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.898574	Prob. F(2,17)	0.1802
Obs*R-squared	5.294826	Prob. Chi-Square(2)	0.0708

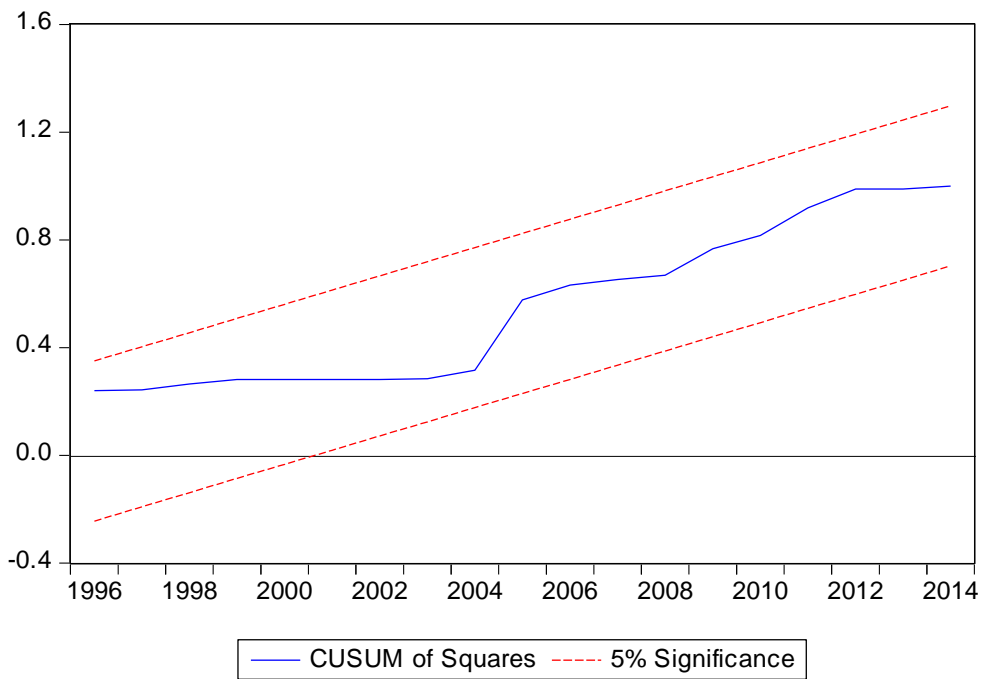
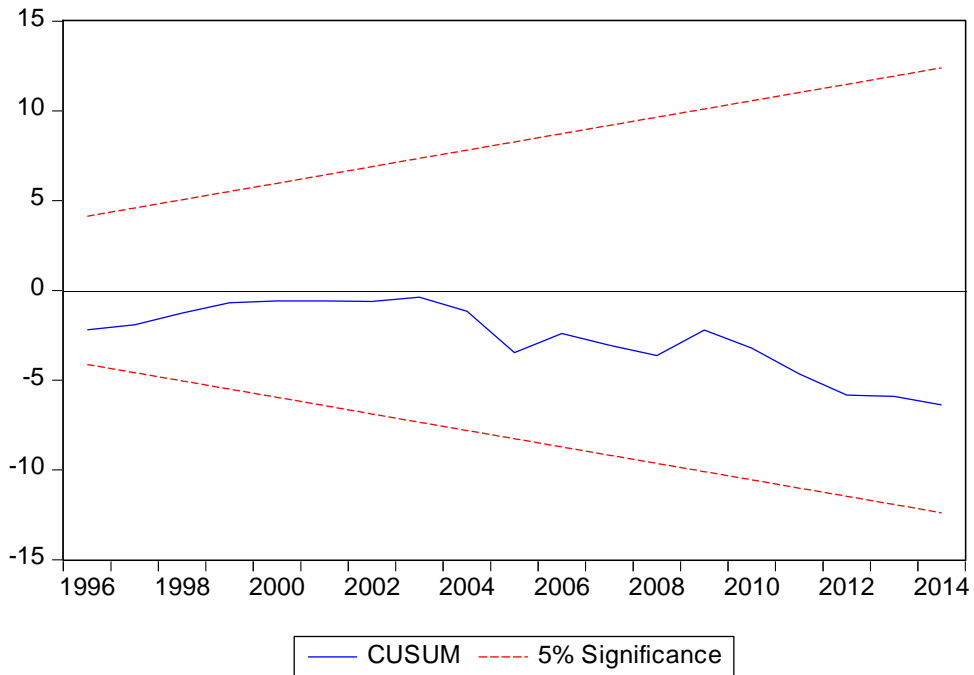
Heteroskedasticity Test: ARCH

F-statistic	0.329454	Prob. F(1,26)	0.5709
Obs*R-squared	0.350357	Prob. Chi-Square(1)	0.5539



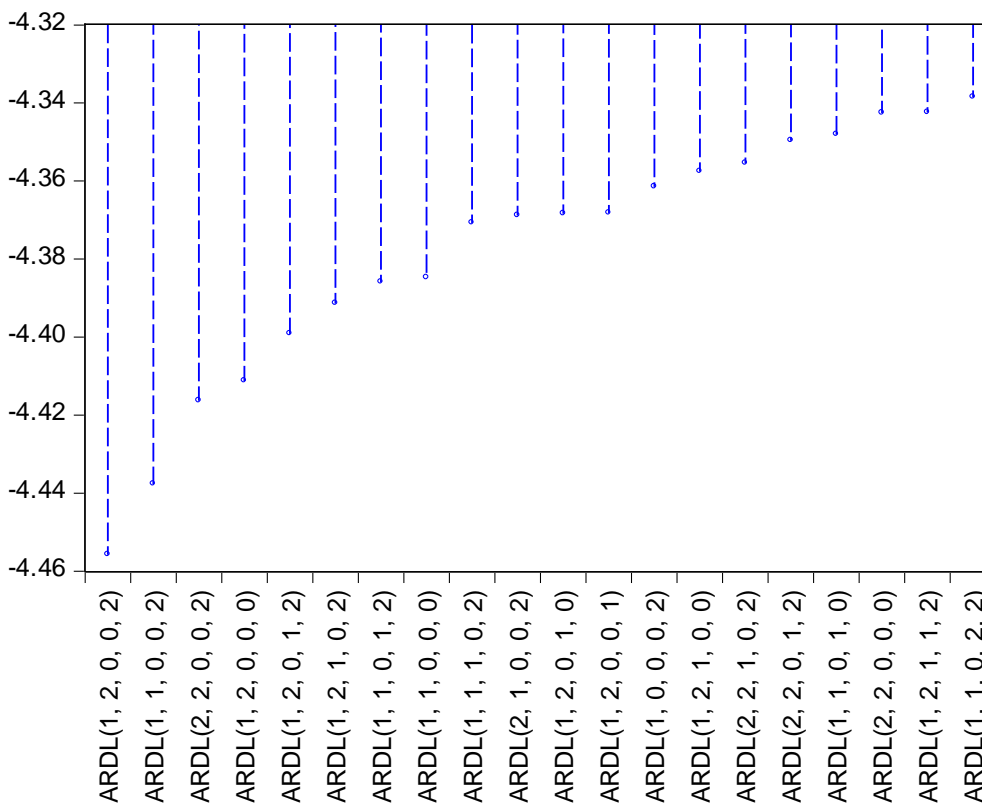
Series: Residuals	
Sample 1986 2014	
Observations 29	
Mean	-6.85e-17
Median	0.000286
Maximum	0.037939
Minimum	-0.055429
Std. Dev.	0.018796
Skewness	-0.460711
Kurtosis	4.250747
Jarque-Bera	2.916177
Probability	0.232681

7.3 Plot of CUSUM and CUSUMQ(Stability test)



7.4 Model selection summary

Akaike Information Criteria (top 20 models)



8. Employment Opportunity

8.1 Key Regression statistics

R ²	0.960204
Durbin Watson Statistics	1.941477
F-statistic (P-value)	73.38382 (0.000000)

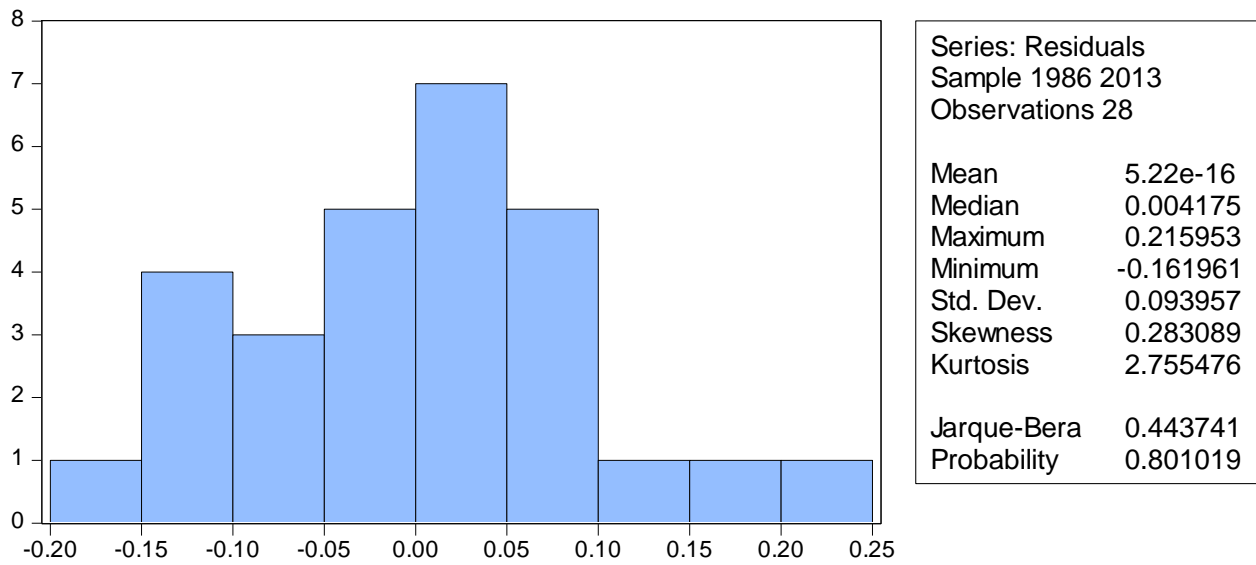
8.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

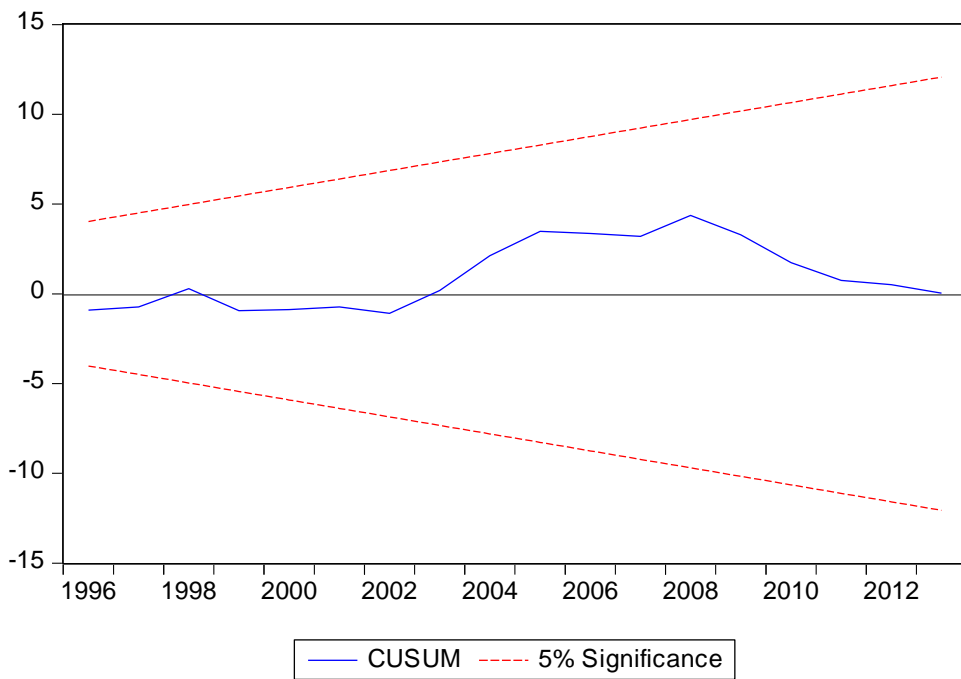
F-statistic	0.700016	Prob. F(2,16)	0.5112
Obs*R-squared	2.252922	Prob. Chi-Square(2)	0.3242

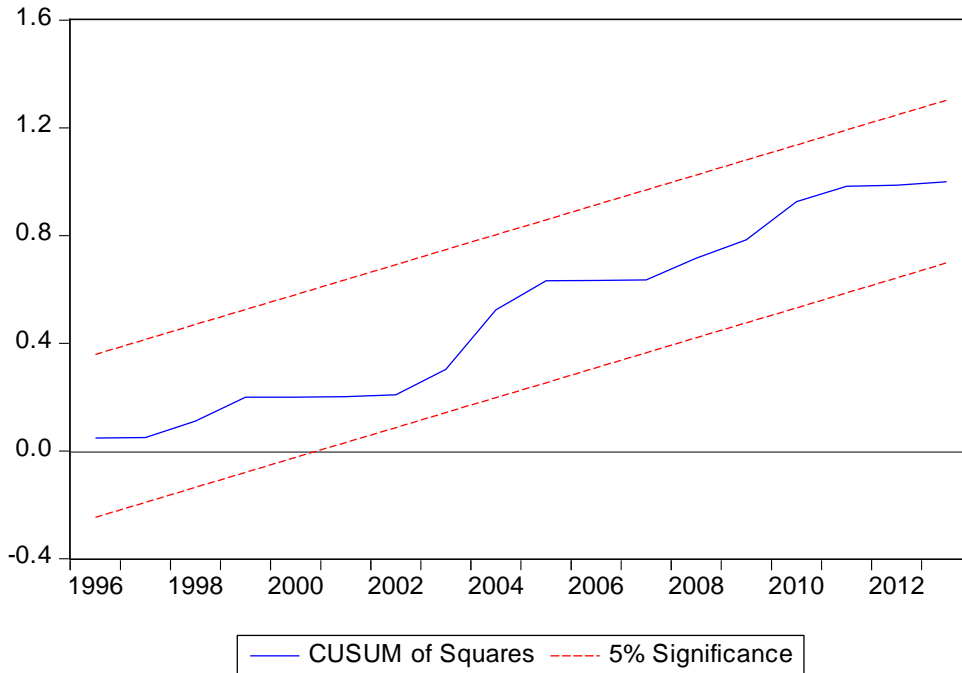
Heteroskedasticity Test: ARCH

F-statistic	0.007036	Prob. F(1,25)	0.9338
Obs*R-squared	0.007597	Prob. Chi-Square(1)	0.9305



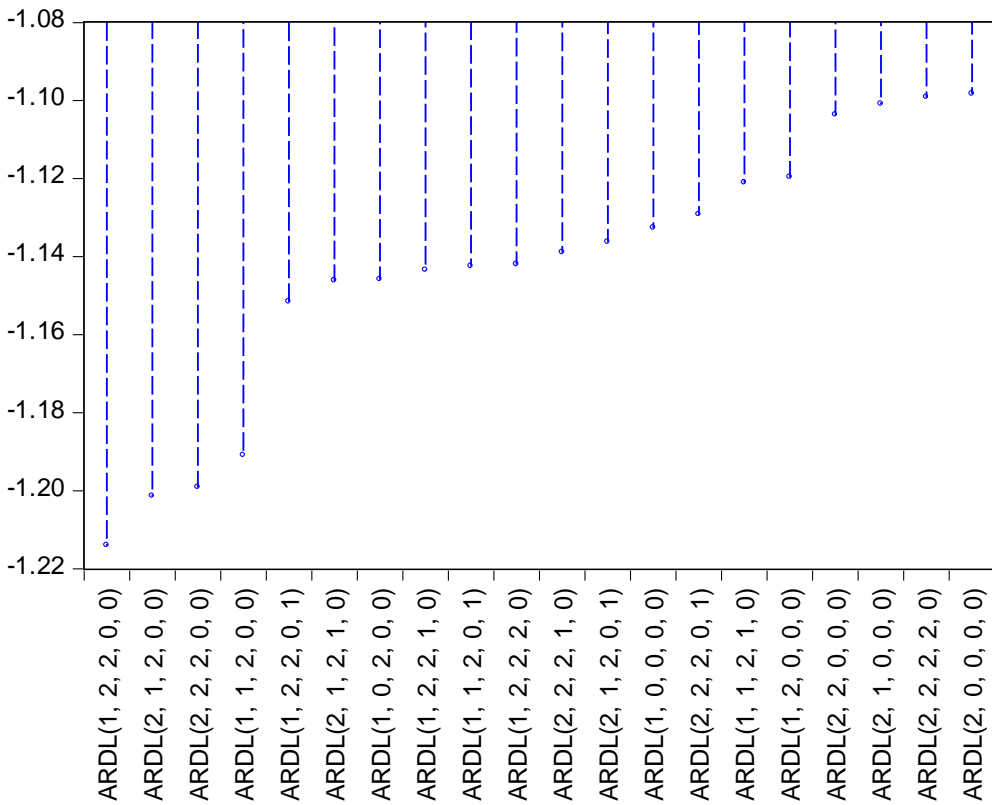
8.3 Plot of CUSUM and CUSUMQ(Stability test)





8.4 Model selection summery

Akaike Information Criteria (top 20 models)



9. Poverty Alleviation and Distribution of income

9.1 Key Regression statistics

R ²	0.938643
Durbin Watson Statistics	1.794770
F-statistic (P-value)	60.00680 (0.000000)

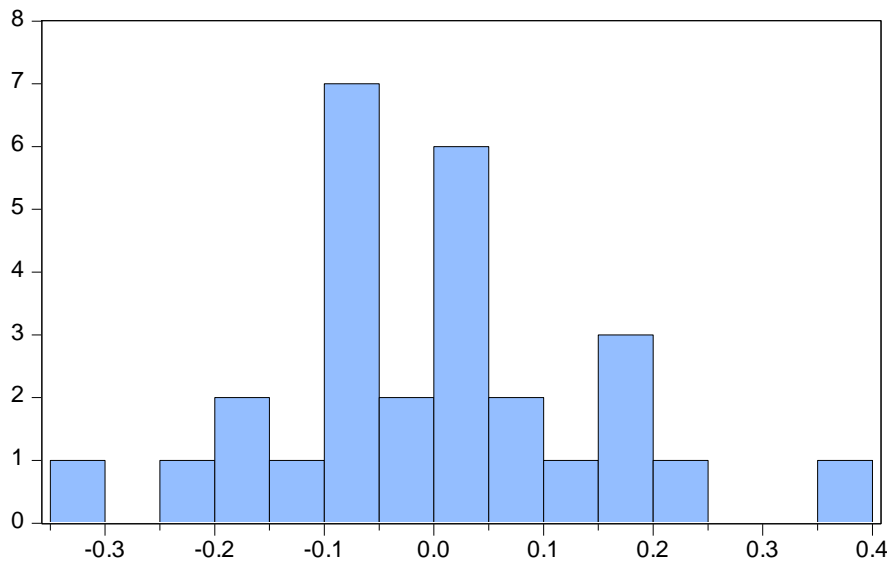
9.2 Diagnostics Test

Breusch-Godfrey Serial Correlation LM Test:

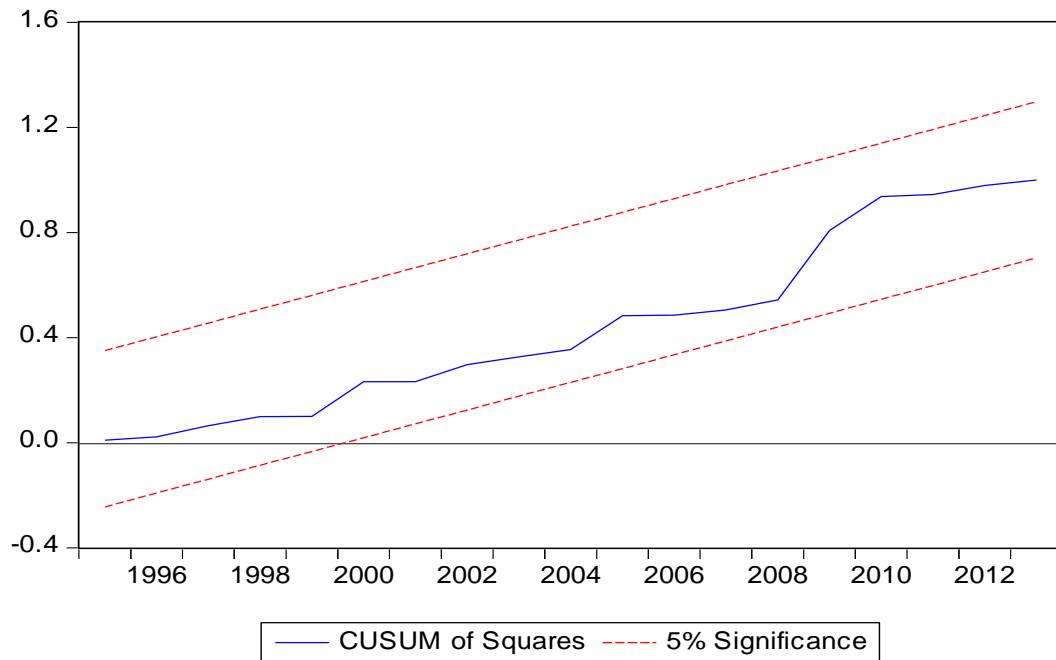
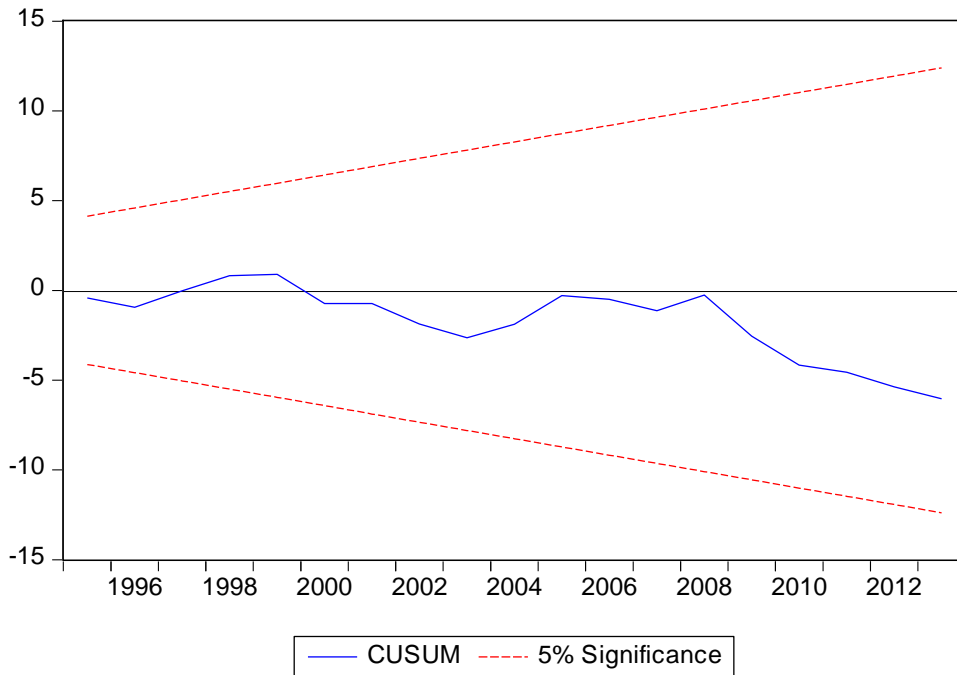
F-statistic	0.334092	Prob. F(2,18)	0.7203
Obs*R-squared	1.002194	Prob. Chi-Square(2)	0.6059

Heteroskedasticity Test: ARCH

F-statistic	0.328789	Prob. F(1,25)	0.5715
Obs*R-squared	0.350483	Prob. Chi-Square(1)	0.5538

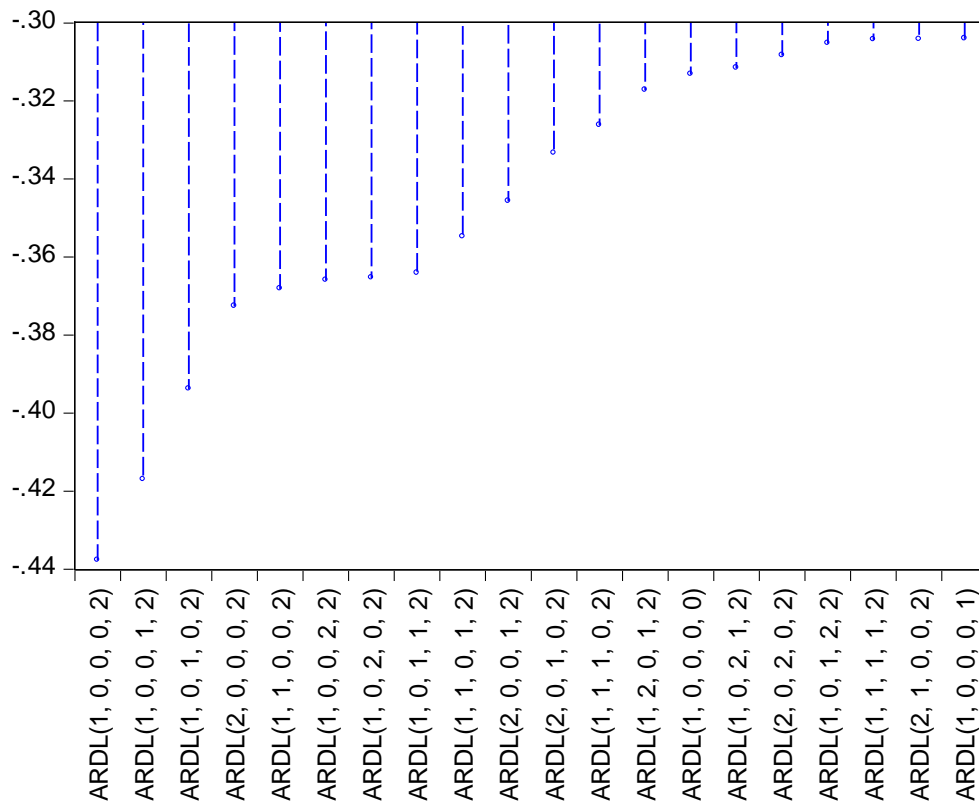


9.3 Plot of CUSUM and CUSUMQ(Stability test)



9.4 Model selection summary

Akaike Information Criteria (top 20 models)



10. Financial stability

10.1 Key Regression statistics

R ²	0.566110
Durbin Watson Statistics	2.058238
F-statistic (P-value)	5.403470 (0.001220)

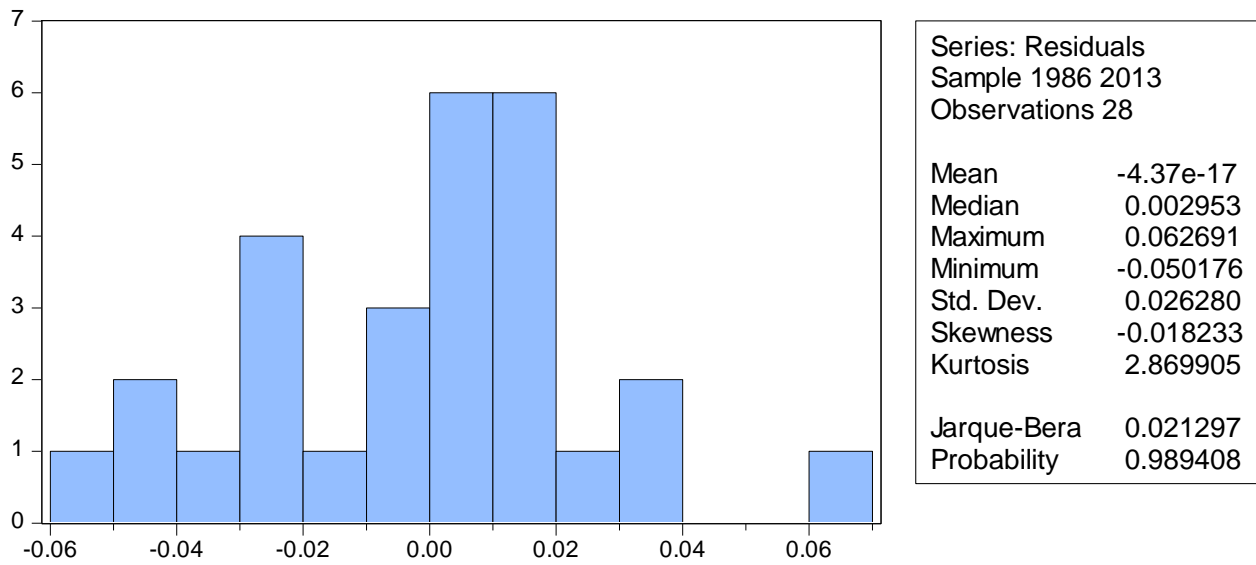
10.2 Diagnostic Test

Breusch-Godfrey Serial Correlation LM Test:

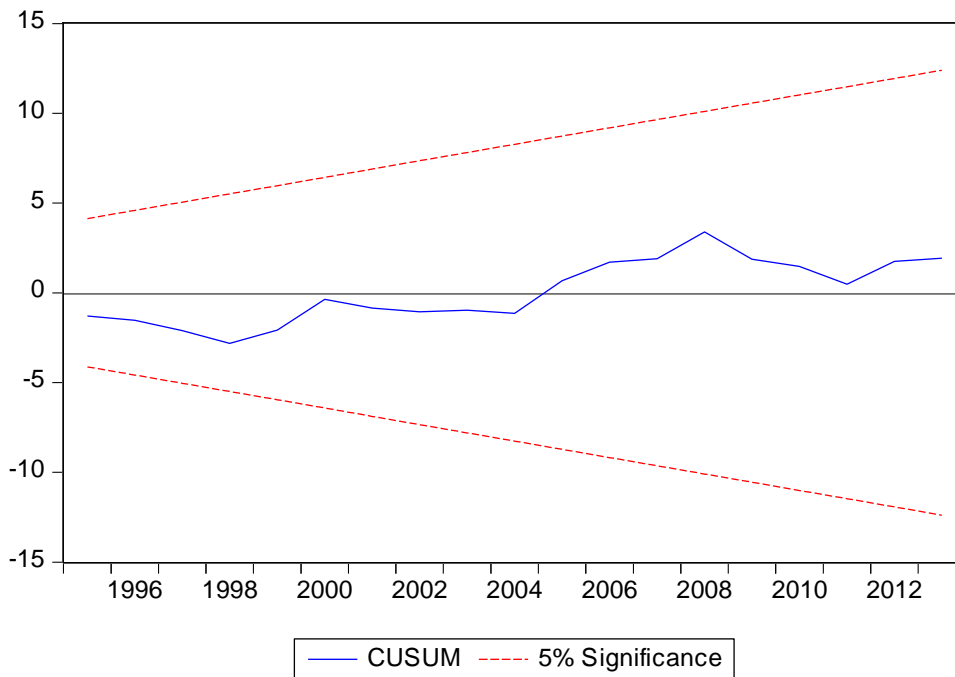
F-statistic	0.350371	Prob. F(2,17)	0.7094
Obs*R-squared	1.108472	Prob. Chi-Square(2)	0.5745

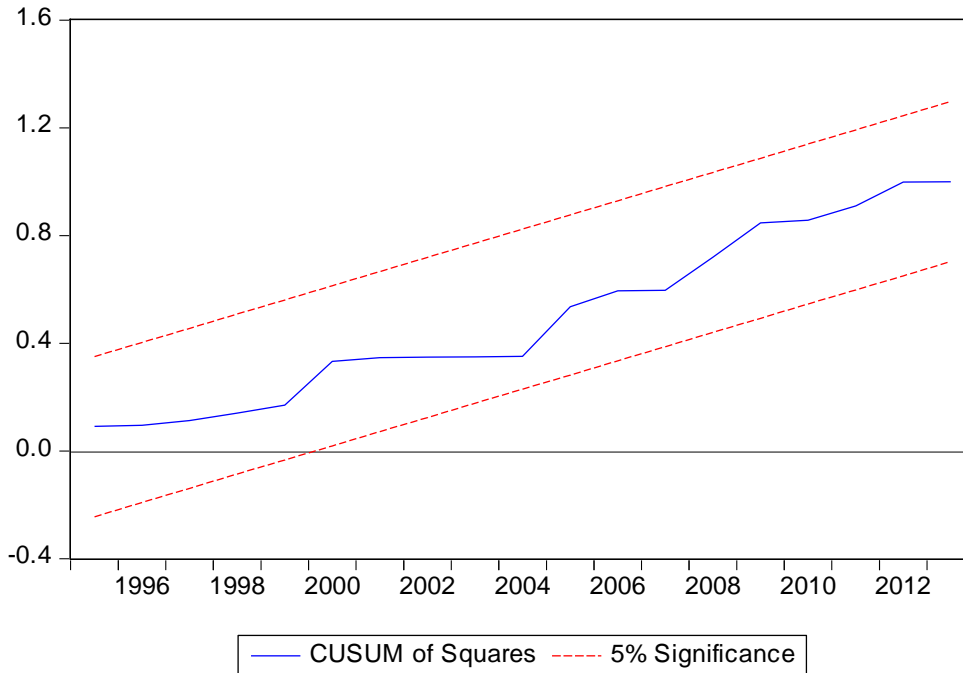
Heteroskedasticity Test: ARCH

F-statistic	0.258101	Prob. F(1,25)	0.6159
Obs*R-squared	0.275900	Prob. Chi-Square(1)	0.5994



10.3 Plot of CUSUM and CUSUMQ(Stability test)





10.4 Model selection summery

Akaike Information Criteria (top 20 models)

