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SCHOOL OF GRADUATE STUDIES

THE ROLE OF BANKS' DEPOSIT MOBILIZATION AND CREDIT ON GROSS CAPITAL FORMATION IN ETHIOPIA

BY

HANNA MEKONNEN

JANUARY 2018

ADDIS ABABA, ETHIOPIA

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STATEMENT OF AUTHOR

I, **Hanna Mekonnen,** hereby declare that a research entitled '**The role of banks' deposit mobilization and credit on Gross capital formation in Ethiopia ''** submitted by me for the award of the degree of Master of Science in Development Economics of St. Mary's University, is original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, school of Graduate Studies for examination with my approval as a university advisor.

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St. Mary's University, Addis Ababa   January 2018

APPROVAL SHEET

As members of board of examining of the final MSc thesis open defense, we certify that we have read and evaluated the thesis prepared by Hanna Mekonnen under the title "**The Role of Banks' Deposit Mobilization and Credit on Gross Capital Formation In Ethiopia**" we recommend that this thesis to be accepted as fulfilling the thesis requirement for the Degree of Master of Science in Development Economics.

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TABLE OF CONTENT

LIST OF TABLES

Page

LIST OF FIGURES

Page

ACRONYMS

ADF	Augmented Dickey–Fuller Test
CBE	Commercial Bank of Ethiopia
CPI	Consumer Price Index
DBE	Development Bank of Ethiopia
DW	Durbin Watson
ECM	Error Correction Model
ESA	European System of Accounts
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GMM	Generalized Method of Moments
GNP	Gross National Product
IMF	International Monitory Fund
MOFED	Ministry of Finance & Economic Development
NBE	National Bank of Ethiopia
NS	National Saving
OLS	Ordinary Least Square
PBC	Private Bank Credit
PBD	Private Bank Deposit
PUBC	Public Bank Credit
PUBD	Public Bank Deposit
RIR	Real Interest Rate
SNA	System of National Accounts
CUMSUM	Cumulative Sum Recursive Residuals
CUMSUMSQ	Cumulative Sum of Squares of Recursive Residuals
UNSNA	United Nations System of National Accounts
VIF	Variance Inflation Factor

ABSTRACT

It is established in economic theory that high savings, coupled with high levels of capital formation are prerequisites for long-term economic growth in any given country. National saving in macroeconomic theory is defined as the combination of public and private saving rates of a nation. Accumulated saving is the source for capital stock which leads to increase investment, output and more employment. Financial institutions play a major role of mobilizing saving or financial resources. Thus, the aim of this study is to investigate the role of bank deposit mobilization and credit on gross Capital Formation in Ethiopia using annual time series data from1991-2016. The result of co-integration test indicated that there is a long run relationship among variables and vector error correction model used to estimate the short run dynamics. The result of the models revealed Public Bank Deposit (PUBD), Public Bank Credit (PUBC), Private Bank Deposit (PBD) and National Saving (NS) have significant role on gross Capital formation in Ethiopia in the long run. But Private Bank Credit (PBC), Bank Investment (BI), Real Interest Rate (RIR) and inflation (INF), found to be statistically insignificant determinants of gross Capital formation in Ethiopia in the long run. However, in the short run, except Private Bank Deposit (PBD) and National Saving (NS) the rest of the explanatory variables such as Public Bank Deposit (PUBD), Public Bank Credit (PUBC), Private Bank Credit (PUBC), Bank Investment (BI), Real Interest Rate (RIR)and Inflation (INF) were statistically insignificant in explaining gross Capital formation in Ethiopia. The overall findings of the study underlined public/private commercial banks deposits and public bank credit are most important factors that positively and significantly influence gross capital formation in Ethiopia. Therefore, in order to acquire maximum benefit from them concerned bodies have to put their effort to sustain the saving culture through financial literacy. Government also should empower private banks on their credit allocation like by revising policies of the imposed credit ceilings on private banks, which reduced the volume of credit.

Key words*: Gross capital formation, Financial Intermediaries, Bank Deposit and Credit, Ethiopia.*

1 INTRODUCTION

1.1 Background of the Study

Capital formation refers to the net addition to the capital stock of any nation. It is defined as an addition to the stock of capital assets set aside for future productive endeavors in the real sector which will lead to more growth in physical capital assets of the country. Capital formation captures all the real-value-added to the economy in real-asset-terms which will lead to further enhancement of savings, investment, and generation of more wealth in future. Capital formation derives from savings accumulation. It has a positive impact on private savings accumulation in the sense that increase in capital formation will lead to more savings (Shuaib, 2015).

Capital formation Classified into public domestic and private domestic investment. Public domestic investment includes investment by government and public enterprises while private domestic investment is an investment by private enterprises and individuals. Gross domestic investment can be attributed to gross fixed capital formation plus net changes in the level of inventories (Ugwuegbu and Uruakpa, 2013).With low per capital formation, economic activity is carried out without the assistance of large quantities of the capital assets such as machinery and equipment which are commonplace in wealthier and advanced countries. The general implication of a low level of capital is a low level of output which in turn results in a low level of national income. With a low level of income, the propensity to consume is so high that little is saved and left over for investment. Yet without large additions to the stock of capital available for production, the- consumption of the people must be low, because of the quantity produced is small (Pierre-Richard et al. 2005).

The process of capital formation is cumulative and self-feeding. It involves three interrelated conditions; (a) the existence of real savings and rises in them; (b) the existence of credit and financial institutions to mobilize savings and to direct them to desired channels; and (c) to use these savings for investment in capital goods (Sunny, 2016).The link between banking, capital formation, and economic growth is that banking through its activities such as savings and deposit mobilization, credit creation, increases the accumulation of capital formation which in turn is expected to enhance economic of the country.

The general effects of a low level of capital in developing countries tend to be forced by factors which reduce the economic effectiveness of most available capital. Agricultural equipment or transportation facilities which are owned by a few "rich" persons may be used to a very limited extent. Technical improvement or invention made in one area cannot be spread to other areas because of poor communications. The effectiveness of available capital assets may also be curtailed by the narrowness of markets. The capital assets available in one area may not be sold and used in other parts (Venkati Ponnala, 2016).

To finance investment necessary for economic growth, the economy needs to generate sufficient savings or borrow from abroad. However, financed through external sources, it could become unsustainable and also compromise policy sovereignty additionally could lead to accumulation of unsustainable debt and carries a foreign exchange risk. Therefore, domestic saving is necessary for a country capital formation because it makes available the domestic resource needed to fund the investment effort of a country. Banks played a great role in any economy with the primary responsibility of financial intermediation in order to make funds available to all economic agents.

To effectively mobilize savings in an economy the deposit rate must be relatively high and inflation rate stabilized to ensure a high positive real interest rate, which motivates investors to save from their disposable income. Well, functioning banks serve as intermediaries accepting commercial and individual deposits (savings) and transferring them in the form of loans to investments. The intermediation process involves moving funds from surplus economic units of the economy to deficit economic units (Uremadu et al. 2004).

The financial system serves as a mechanism to economic development through a range of institutional structures and the primary task of the financial system is to seek outs funds from surplus spending economic units and allocate deficit spending economic units in order to produce goods and services and as well to make investment in new equipment and facilities so as to stimulate the growth of the economy and improve the standard of living of citizens. As the economy grows the financial system becomes increasingly more complex and its structure more sophisticated (Ochejele, 2004).

The financial system of every nation has a practical relationship with the size of the economy. A growing economy has to put more responsibilities on the financial sector in order to mobilize the needed capital to make easy production and generate income and employment. Conversely, an economy that does not experience growth on persistent basis is likely to have a stagnant financial sector as there seemed to be no incentives in place for investment. Through the process of growth, as the financial system offers a wide range of portfolio options for savers and issuable instruments for investors, a function often referred to as financial intermediation (Nzotta, 2004).

Lack of efficient financial intermediation especially in developing countries is widely evidenced by the mismatch between savings and investment. It is however obvious that the need for investment in the real sector of these countries cannot be disputed. This was addressed in the past, for the purchase of capital, through the introduction of development financial institutions and other such vehicles by providing credit below market rates (Okaro, 2016).

According to Ethiopia Banking Business Proclamation "Banking Business" means the business of receiving or accepting money or its equivalent on deposit and lending out this money in order to earn a profit; transfer funds; the buying and selling of gold and silver bullion and foreign exchange; discounting and negotiation of promissory notes, drafts, bills of exchange and other evidence of debt; and any other activity recognized as customary banking business.

The Ethiopia financial system can certainly be broadly divided into two sub-sectors Public Banks and Private Banks. The number of banks operating in the country is 18 out of it there are 2 public banks (CBB merged with CBE) Commercial Bank of Ethiopia and Development Bank of Ethiopia and there are 16 private commercial banks. According to Africa Development Bank 2016, reports in Ethiopia state banks are currently under pressure to collect deposits on behalf of the state to finance the huge developmental activities of the country. Likewise, the private Commercial Banks of Ethiopia have to compete with the state banks to get enough loan able funds to stay competitive, become profitable and generally fulfill the business objectives of their respective shareholders by increasing their deposit base. Hence this study will investigate the role Banks deposit mobilization and credit financing on the capital formation of Ethiopia.

1.2 Statement of the problem

Angus (2005) point out that Africa endures a problem of savings and investment gap. As a result of this, countries faced challenges to finance investments needed for growth from domestic saving and their investment financed through an external source but this can considerably increase debt burden and cannot be a solution in the long run, (Edward, 2003). According to UNCTAD (2016) report, banks' participation in deposit mobilization and financing of domestic investment in developing nations remained ineffective.

According to MOFED, (2015/16-2019/20), one major problem facing Ethiopia in achieving accelerated growth and development is a low level of capital formation due to the low level of saving. As per IMF, 2014 report "The GTP requires large public sector borrowing and domestic resource mobilization to finance high levels of investment. The current level of domestic savings is insufficient to finance the high investment (particularly public), thus opening up a larger source gap. There is a risk that the investment levels envisaged under the plan would not materialize and may outstrip the absorptive capacity of the economy". As the widening saving-investment gap continues to be financed through external sources, it could become unsustainable. It could not only compromise policy sovereignty but also could lead to accumulation of unsustainable debt. Therefore, banks participation in deposit mobilization and credit financing in Ethiopia is a very critical and reliable factor in the capital formation process.

Currently, the Banking sector in Ethiopia is composed of two public owned and sixteen private commercial banks. But the Ethiopian financial system still cannot narrow saving-investment gap that will enhance the functioning of the economy in a manner that will strength capital formation (Melkamu, 2015).The government continues to implement oppressive policies that negatively impact the performance of money and foreign exchange markets and weaken private commercial banks. In addition to controlling interest rates on deposits, the government interferes with the credit allocation decisions of private banks. Credit is often rationed in favor of larger and more established businesses.

In fact, the World Bank's assessment demonstrates that state-owned enterprises have much better access to credit than private businesses World Bank (2009). The state-owned Development Bank of Ethiopia only lends to support the government's industrial development initiatives, selectively providing capital to firms in sectors the government wants to promote. Moreover, the National

Bank issued a directive on April 6, 2011 ordering private commercial banks to buy government bonds worth 27 percent of the loan disbursements they have made since July, 2010. This measure was set to earn 3 percent interest while the deposit rates set by the National Bank stand at 5 percent. Moreover, the extent of financial repression has contributed to negative effects on savings, capital formation and financial development.

Role of banks on deposit mobilization, credit financing and capital formation of country studies are largely conducted among developing countries, A studies conducted by (Ali, et al., 2016) had studied "Deposit Money Banks' Credit and Investment Drive of Developing Economies: Empirical Evidence from Nigeria" and in their work the empirical results of their study shows that both total Deposit, Money banks credit and Interest rate exert a positive and significant impact on investment in Nigeria. However, the result of the interest rate is at variance with the a priori expectation. Considering the empirical results, the study concludes that Deposit Money Banks' credit to the private sector should be sustained as it is a viable source of finance to the private sector of the of the Nigerian economy.

Paschal, et al. (2016) investigated the impact of bank credit on capital formation in Nigeria between the years 1980 and 2014 and found a positive but no significant impact. The lack of significance was attributed to the bottlenecks or stringent rules surrounding credit allocation by banks, which have so far frustrated the efforts of monetary and federal authorities in Nigeria to let funding get to where they are most needed. Revitalization and substantial capital enhancement of the only infrastructure bank – former Urban Development Bank – was recommended.

To the best of the researcher knowledge in Ethiopia, only one study was conducted on the subject. Muluneh (2015) investigated "the role of bank deposit mobilization and credit financing in Capital Formation of banking industry" and on his work used Gross fixed capital formation (GFCF) as dependent variable, bank credit (BC)bank deposit (BD), bank investment (BI) as independent variables, and national saving (NS) and real interest rate (RIR) as control variables. The research identified that bank deposit, bank credit, and national saving has a great role in capital formation in Ethiopia since the coefficients of the variables are statistically significant. However; bank investment and real interest rate become an insignificant effect on capital

formation in Ethiopia since the coefficients of the variables are turned out to be statistically insignificant.

However Ethiopia financial system can certainly be broadly divided into two sub-sectors Public Banks and Private Banks but in his study he did not separate their role of contribution rather he showed us in aggregate also he did not include one major macroeconomic variable which is area of recent interests in Ethiopian monetary policy like Inflation. Hence, the inclusion of such variable on the model will contribute to the policy implication. In addition to that there is only one study conducted on the subject matter. So it is difficult to conclude the role of financial institution on capital formation in Ethiopia since other developing countries has different economic, institutional and financial structure.

By and large, the aim of this study was to assess the role of Ethiopian Banking industry on capital formation by using the appropriate variables that were considered in this study and try to fill the gap on the previous study by considering the role of public and private banks separately.

To get the comprehensive understanding of the phenomenon, the following postulated research questions need to be addressed.

- ✓ Does Bank deposit have a significant role on gross capital formation in Ethiopia?
- ✓ Does Credit have a significant role on gross capital formation in Ethiopia?
- ✓ Does Bank investment have a significant role on gross capital formation in Ethiopia?

1.3 Objective of the study

1.3.1 General Objective of the Study

The general objective of this study is evaluating the role of bank deposit mobilization and credit financing on Capital Formation in Ethiopia.

1.3.2 Specific Objective of the Study

More specifically the study seeks to achieve the following specific objectives

- ✓ To assess the contribution of private/public banks' deposit mobilization on gross capital formation in Ethiopia.
- ✓ To assess the effect of private/public banks' credit financing on gross capital formation in Ethiopia.

✓ To evaluate how banks' investment contribute to the gross capital formation in Ethiopia

1.4 Research Hypothesis

The study needs to put the expected results or hypothesis on the impact of explanatory variables on Gross Fixed Capital Formation in Ethiopia. Therefore, this study develops the following null hypotheses:

✓ $H0_1$: Public bank deposit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia.

✓ $H0_2$: Private bank deposit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia.

✓ $H0_3$: Public bank Credit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia

✓ $H0_4$: private bank Credit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia

✓ $H0_5$: Bank investment does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia

1.5 Significance of the Study

Knowledge of the extent to which banks participation in deposit mobilization and credit financing on the capital formation of a country is a principal agenda to the policymakers. Most of the previous studies conducted on countrywide on Gross Fixed Capital Formation have given focus on generally on the relationship between Gross capital formation and economic growth. To the knowledge of the researcher, there is only one study conducted in this area in Ethiopia. Therefore, the findings of this study are believed to provide a useful contribution to the empirical basis needed for proper understanding of the previous routes as well as give emphasis for the future process on the role of Banks in capital formation.

Further, the study will be significant in a sense that, given the current activities of investment of the Ethiopian government, it will help to figure out the main variable that determines deposit thereby manipulate the controlled macroeconomic variables to mobilize the required saving rather than depending on external sources to finance investment.

Moreover, identified results could provide information to the stakeholders for instance Government, banks, to the policymakers and to those interested to make a further study on the related area in the future.

1.6 Scope and limitation of the Study

1.6.1 Scope of the study

Capital Formation is an extended concept with a broader definition that includes stocks of physical-produced items, knowledge and skills (human capital) and stocks of natural and environmental assets while this study only considers stocks of physical-produced items capital formation and called Gross Capital formation without deducting depreciation. The time covered under this study will be delimited to the time period from 1991/92 to 2015/16 by using time series data from secondary sources.

Many empirical kinds of literature in the area of the subject show a number of factors that can determine Gross capital formation both in developed and developing countries. However, taking into account data constraints, the dependent variables are private/public Banks Deposit (BD), private/public Banks' Credit (BC) and Investment by banks in Ethiopia (BI) and further macro-level control Variables of National Saving (NS), Real Interest Rate (RIR) and inflation (INF).

1.6.2 Limitation of the Study

The study only covers twenty-five years of time series data from the period 1991-2016 on public/private bank deposit, public/private bank credit and bank investment and three macroeconomic control variables that can affect gross capital formation in Ethiopian. Because of the limitation of data on private banks before 1991the study only covers the stated time period. The study suffers from certain limitations like inconsistent data by different institutions and Due to time and data limitation the study took aggregate Gross capital formation which can be taken as separately public/Private Gross fixed Capital formation.

1.7 Organization of the study

The study was organized into five chapters; the first chapter is an introduction which gives a background of the research paper, the research problem and scope and other basic issues of the paper, the second chapter deals with the literature review which includes related theoretical and empirical literature reviews. The Methodology of the Research, Research Design, Data Source,

Model specification and methods of data collection and Methods of Data Analysis described in detail in chapter three.

The fourth chapter presents analysis and presentation. This section of the research paper concerned on analysis and interpretation, which shows and explains the descriptive analysis, descriptive statistics, goodness test, among identified variables. Finally, in chapter five, the main findings of the study are summarized and the chapter also discusses some important recommendations.

2 LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 General idea of Capital Formation

Academicians come across narrower and broader definitions of capital, reflecting the historical conceptual variations and the practical difficulties in holding economic statistics. In contrast to the narrower definition of capital as physical-produced items that are used in the production process and providing income-generating service, which have an extended concept of capital with a broader definition that includes stocks of physical-produced items, knowledge and skills (human capital) and stocks of natural and environmental assets (Atlaw et al., 2011).

 The widely applied literature that provides conceptual and accounting framework for capital and capital formation is the System of National Accounts (SNA) of the United Nations. The SNA is an internationally agreed standard for accounting economic activities based on economic principles and as such provides guidance for national accounts. This evolving standard since 1953, with major updates in 1968, 1993 and 2008, frames the concept of capital in the concept of economic asset, which is a store of value for the owner who holds or uses the entity over a period of time. In this system of accounts, the coverage of asset extends only to those assets subject to ownership rights from which economic benefits flow. As such it excludes from the category of asset consumer durables, human capital and natural resources that are not capable of bringing economic benefits to their owners (UNSNA, 2008).

Capital accumulation or formation refers to the net addition to the capital stock after of any nation after depreciation. It is defined as an addition to the stock of capital assets set aside for future productive endeavors in a real sector which will lead to more growth in physical capital assets of the country. Capital formation is a perception used in macroeconomics, national accounts and financial economics and seldom used in corporate accounts.

Gross fixed capital formation is distinct as fixed assets accumulation. It is a definite statistical concept used in national accounts statistics, econometrics and macroeconomics. In that sense, it refers to a measure of the net additions to the (physical) capital stock of a country (or an economic sector) in an accounting interval or, a measure of the amount by which the total physical capital stock increased during an accounting period. In a much broader sense, the term

"capital formation" has recently been used in financial economics to refer to savings drives, setting up financial institutions, fiscal measures, public borrowing, development of capital markets, privatization of financial institutions, and development of secondary markets. In this usage, it refers to any method for increasing the amount of capital owned or under one's control or any method in utilizing or mobilizing capital resources for investment purposes. Gross fixed capital formation via fixed assets accumulation can be increased by bonds financing and equity financing. Corporate houses finance their assets by floating their shares in the stock market. As a result, the supply of shares increase which cause declining share prices. Economic theory suggests that increase in Gross fixed capital formation cause to decline share prices in short run but in long run, production is increased which cause to raise share prices (Shuaib, 2015).

Gross fixed capital formation is called "gross" because the measure does not make any adjustments to deduct the consumption of fixed capital (depreciation of fixed assets) from the investment figures (Kanu et al. 2014). Gross fixed capital formation can be classified as gross private domestic investment and gross public domestic investment. The gross public investment includes investment by government and public enterprises. Gross domestic investment is equivalent to gross fixed capital formation plus net changes in the level of inventories (Venkati, 2016).

Finance is required for different purposes by different organizations, individuals, and other economic agents. In order to provide the needed fund, there are varieties of institutions rendering financial services. Such institutions are called financial institutions.

2.1.2 Financial Institution

Financial intermediaries "especially banks are the basis, the key player in the economy of a country. The economies of all market-oriented nations depend on the efficient process of complex and precisely balance systems of money and credit. Banks are an essential element in these systems. They offer the volume of the money supply as well as the primary means of facilitating the flow of credit." Accordingly, the economic well-being of a nation is a function of advancement and development of the banking industry (Agu, 2004).

The financial intermediaries are commercial companies, firms, whose behavior can be analyzed in the same way as the economists analyze any other type of firm. Thus financial intermediaries

can be regarded as commercial companies that produce different types of loan products for the individuals who wish to borrow. The main finished products of financial intermediaries are the loans granted to clients, and the main variable inputs are the deposits attracted from the depositors. Furthermore, we can regard financial intermediaries as companies that have a sole purpose the maximization of profit, profit that occurs as a result of the difference between the interests perceived for the granted loans and the interest abated for the attracted deposits. The maximization of profit is made when the difference between the total incomes minus the total costs is maximum, which is when the marginal income is equal to the marginal cost (Andris, 2009).

In order to attract more resources necessary for the increase of the volume of granted loans the financial intermediary must increase the abated interest of the depositors which is transposed into the increase of costs, thus the cost of resources for short-term is increasing. Financial firms are large in size and this is owed to the scale economy which is manifested in the production of financial products. In this analysis, we must consider that financial intermediaries do not activate on a market characterized by a perfect competition but rather on one with an imperfect competition, oligopoly - type, dominated by a few large firms (Ibid).

The economies of all market-oriented nations depend on the efficient operation of complex and delicately balance systems of money and credit. Banks are an indispensable element in these systems. They provide the bulk of the money supply as well as the primary means of facilitating the flow of credit." Consequently is assumed that the economic well-being of a nation is a function of advancement and development of the banking industry (Agu, 2004).

Effective banking systems expand financing opportunities for both large and small companies, while also supporting financial sector development and the expansion of access to funding among low-income retail customers and micro-enterprises. Beyond funding, banks also provide essential financial services to individuals and enterprises including the collection, custodianship, safeguarding of deposits made by savers and the provision of payment services.

There is a large literature that suggests a positive relationship between the level of financial intermediation performed by banks and investors. As described in (Loungani and Rush 2003), the basic idea is that some small and medium enterprises (SMEs) are unable to get financing directly by issuing securities on the open market. Consequently, these borrowers are strongly

dependent on specific sources of credit such as bank lending, and their borrowing is highly sensitive to the terms on which is available. Shocks or disturbances to the supply of bank credit can deprive firms of investment financing, leading to a decline in the level of gross fixed capital formation.

IMF (2005) supports the view that increased availability of credit is associated with the higher investment, provided that firms depend partly on external finance. The regression results presented in the IMF's analysis suggest that the effect of an increase in credit on investment is statistically significant but rather modest for industrial and emerging economies during 1972-2004.

Although Pelgrin et.al (2002) find a much stronger effect of private credit on business investment for a number of OECD countries during 1970-1995, they do conclude that the size and significance of the coefficient on private credit has diminished since 1995 relative to other measures of stock market developments, a factor consistent with the growing importance of capital markets and sources of financing other than bank loans.

2.1.3 Theories of Investments

A number of theories seeking to explain the investment behavior of business firms and governments exist in the literature. Some of them include A) Marginal efficiency of the capital hypothesis (B) The Accelerator theory of investments and (C) Tobin Q theory of investment.

A) Marginal Efficiency of Capital Hypothesis

Marginal efficiency of capital hypothesis is a Keynesian concept; that stipulates the rate of discount which equates present value of net expected revenue from an investment of capital to its cost. The concept plays a major role in the Keynesian theory of investment in which the level of investment is determined by the marginal efficiency of capital relative to the rate of interest. If the marginal efficiency rate is higher than the rate of interest, investment will be stimulated; if not, investment will be discouraged. This concept is based on the ordinary mathematical technique of computing present value of a given series of returns discounted at a specified discount rate (Kanu, et.al, 2014).

B) The Accelerator Theory of Investments

The Accelerator theory of investment suggests that as demand or income increases in an economy so does the investment made by firms. In a comprehensive way, the accelerator theory of investment is reformed to the flexible accelerator model which favors the larger gap between the existing and the desired capital stock reveals the more investment rates. Moreover, the increment of the desired capital doesn't occur instantly, it depends on the adjustment coefficient where it is influenced by different factors such as operational capacity in the production process. In light of this, in the neoclassical model, as (Jorgenson, 1967) explains total investment is a function of the expansion and replacement investment at a time t.

$$\text{Investment}_t = I^{expan}_t + I^{Repl}_t \text{.. (1)}$$

Replacement investment proportional to capital stock with a speed of adjustment

$I_t^{replace} = \phi k_t$ and investment in the new project becomes:

$$\text{Investment}_t = W(L)(K^*_t - K_{t-1}) + \phi k_t \text{...(2)}$$

This description accounts distributed lags in the delay of the adjustment process of capital stock. Finally, in the flexible accelerator model the investment function takes the form:

$$\text{Investment}_t = K_t - K_{t-1} = \phi(K^*_t - K_{t-1}) \text{... (3)}$$

Where K_t is actual capital at time t; K_{t-1} at previous period capital stock; K^* is the desired one; denotes adjustment coefficient. This illustrate that investment is ϕ and I_t investment at time t, function of the gap between the desired and the existing capital stock. The rate of investment activity rises when the gap between the desired and the existing capital stock increases (Goodwin, 1951) and this is a version of neoclassical model explained by of (Jorgenson, 1967).

Desired capital stock (K^*) is the amount of capital that the sector would like to have in the future and the existing capital is accumulated value at the time (t-1). The desired capital (K^* t) negatively associated with the rental cost and positively with the level of output growth. The increment rate between the desired and the existing capital stock is given by the flexible accelerator model $I_t = \phi(K_t - K_{t-1})$.

According to the flexible accelerator model by (Koyck ,1954) and (Chenery ,1952) the rate of investment by firms is determined by the size of the gap between the existing capital stock and

the desired stock needed to raise output to the desired level required to meet a demand shock. Thus the larger the gap between the existing capital stock and the desired capital stock, the greater will be a firm's rate of investment.

C) Tobin Q-Theory of Investment

Tobin in 1969 postulated the Tobin Q-Theory of investments which states that investment is made until the market value of assets is equal to the replacement cost of assets. In the ―Q theory of capital formation (which is also in the neoclassical framework) the ratio of the market value of the existing capital stock to its replacement cost (the ―Q ratio) is the main force driving investment and growth. Tobin argued that delivery lags and increasing marginal cost of investment are the reasons why Q would differ from unity.

Another approach dubbed ―neoliberal (Galbis, 1979) emphasized the importance of financial deepening and high-interest rates in stimulating growth. The proponents of this approach are (McKinnon, 1973) and (Shaw, 1973). The core of their argument rested on the claim that developing countries suffer from financial repression (which is generally equated with controls on interest rates in a downward direction) and that if these countries were liberated from their repressive conditions, this would induce savings, investment, and growth. Not only will liberalization increase savings and loan able funds, it will result in a more efficient allocation of these funds, both contributing to a higher economic growth.

In the neoliberal view, investment is positively related to the real rate of interest in contrast with the neoclassical theory. The reason for this is that a rise in interest rates increases the volume of financial savings through financial intermediaries and thereby raises investible funds, a phenomenon that (McKinnon, 1973) called the ―conduit effect.

Thus, while it may be true that demand for investment declines with the rise in the real rate of interest, realized investment actually increases because of the greater availability of funds. This conclusion applies only when the capital market is in disequilibrium with the demand for funds exceeding supply.

2.1.4 Financial sector and Capital Formation

Mobilization of savings is one of the major functions of financial institutions. By mobilizing the savings of millions of savers in an economy and the channeling of same to the deficit spending units, the funds or capital needed for economic growth and development is enhanced.

Saint and Paul (1992) identified capital accumulation as a major determinant factor in the development process in relating the growth rate of an economic output to that of its capital stock. They pointed out the dual role of capital as creating productive capacity and effective demand. In their model, capital stock (investment) was assumed to be equal to saving that is I = S. According to Harrod, who viewed an increase in capital stock as synonymous with investment, is a dependent factor of the rate of growth of income, which determines the level of savings.

There is a consensus in the theoretical literature that the basic activities of banks are acceptance of deposits and lending to a large number of agents, holding of liquid reserves against predicated withdrawal demand, issuing of liabilities that are more liquid than their primary assets and eliminating or reducing the need for self-financing of investments. In particular, by providing liquidity, banks permit risk adverse savers to hold bank deposits rather than liquid (but unproductive) assets. The funds obtained are then made available for investment in productive capital (Ali et.al 2016).

Credit may mean different things to different professions. For example, in financial management credit is defined as a legal contract where one party receives resource or wealth from another party and promises to repay him on a future date along with interest. In simple terms, a credit is an agreement of postponed payments of goods bought or loan. With the issuance of a credit, a debt is formed. The number of loans and advances given by the banking sector to economic agents constitutes bank credit. In banking, credit is defined as the amount of money available to be borrowed by an individual or a company which must be paid back to the lender at some point in the future (Okaro, 2016).

Spencer (2013) noted that credit implies a promise by one party to pay another for money borrowed or goods and services received. Credit cannot be divorced from the banking sector serve as a conduit for funds to be received in form of deposits from the surplus spending unit of the economy and passed on to the deficit spending units who need funds for productive purposes.

Bank credit is the borrowing capacity provided to an individual, government, firm or organization by the banking system in the form of credits. Credit channels savings into productive investment thereby encouraging economic growth. Thus, the availability of credit allows the role of intermediation to be carried out, which is important for the growth of an economy. Finance literature provides support for the argument that countries with better/efficient financial systems grow faster while inefficient financial systems bear the risk of bank failure (Kasekende, 2008).

Banks accept deposit from individuals and institutions thus transferring funds from the surplus sector to the deficit sector of the economy (Mishkin, 2007). Though they are subject to certain regulations by the regulatory authorities, financial intermediaries still determine the rules for allocating funds, and as such, they play a significant role in determining the type of investment activities, the level of job creation and the distribution of income (Gross, 2001). The availability of credit function positively allows the fruition of this role and is also important for the capital formation and growth of the economy.

According to Alede, et al. (2003), empirical evidence suggests that there are various factors affecting the demand for, and supply of credit. These factors include the following: - public sector, private/corporate savings, regulatory and monetary policies, and the level of economic activity, inflationary expectations and the structure of the financial system. The structure of the financial system can influence the volume of loan able funds. A shallow and repressed market portends weak intermediation and low funds mobilization, while a high deepened market engenders the reverse (Tobin, 1979).

Similarly, the size and structure of the informal sector may promote or hinder the availability of loan able funds. The larger the size of the informal markets, the less the availability of loan able funds in the banking system and vice versa. In so far as savings affect the supply of loan able funds, the health of the banking system is an important explanatory variable for savings too. For example, during a banking crisis, public confidence in the banking system wanes and household savers are reluctant to put their money in the depository institutions. In fact, loss of confidence in the financial system can cause a run on banks and affect the supply of loan able funds and country cannot form capital by getting loan able fund from the financial institution (Alade, 2003).

Even if many scholars and literatures pointed out the positive impact of financial intermediaries on capital formation there are Criticisms of the financial liberalization theory include the neo-structuralists who illustrates that financial liberalization can cause a decline in investment efficiency if it causes a shifting of resources from the formal to the informal financial sector. Informal financial markets are more efficient in allocating credit because they, unlike formal intermediaries, are not subject to reserve requirements which reduce the amount of credit provided by banks. This may mean they (informal intermediaries) can allocate credit more efficiently. In Sub-Sahara Africa countries informal financial intermediaries do virtually all financing of investment projects and so liberalizing the formal financial markets will not really enhance credit allocation. On the contrary, it could cause a shifting of resources from the informal to formal markets and result in a fall in both the quantity and quality of investment (Berehane, 2016).

2.1.5 Capital Formation, Economic Growth, and Development

Traditional economists like Adam Smith, J.S Mill modern economists like Harrod, Domar, etc, have considered capital formation as the most important factor of economic development. The importance of capital formation becomes more known with the help of the following factors:

A rapid increase in economic development: Economic development of the underdeveloped countries means to make an increase in the production or national income of those countries. Increase in production can be made by two methods. Firstly, by expanding the production techniques and secondly, by improving the techniques. Both of these require capital. It is imperative to increase the rate of capital formation for the economic development. As a result of it, stocks of instruments and machines, etc., can be maintained, and large-scale production can be achieved. Production can be increased in two ways; namely through capital deepening and capital widening.

Increase in employment: Capital is required for an increase in employment. Population in underdeveloped countries increase very fast, Increase in production capacity needs an increase in the rate of capital formation. If there is no increase in capital formation, growing population will simply add to unemployment.

Formation of human capital: Development or formation of human capital is possible only through capital formation. The expenditure incurred on health, education, social service and social welfare, is for the formation of human capital. By investing this capital in workers, their efficiency is increased.

Creation of overhead capital: Overhead capital has a great significance for economic development. It includes roads, means of transport, canals, multipurpose projects, powerhouses, etc. Without developing it, economic development would not be possible. So, capital formation increases the facilities of overhead capital.

Economic welfare: Increase in production, income and employment opportunity takes place by the capital formation in underdeveloped countries. If the increased income is distributed equitably and properly, there will be an elevation in the economic welfare of the public (Success et al. 2014).

2.1.6 Deposit, Credit/ loan and Capital formation in Ethiopia

One major source for financing gross capital formation is gross domestic saving. A number of studies found that there is strong correlation between saving and investment or capital accumulation.

Modern banking in Ethiopia started in 1905 with the establishment of Bank of Abyssinia, which was based on a fifty year franchise given to the British-owned National Bank of Egypt. It has landmark significance in introducing financial services, which were hitherto unknown in the country (Alemayehu, 2006).As the society was new for the banking service, banks had faced difficulty in familiarizing the public and they faced considerable cost of installation. In the pre-1974 era, there hardly was any banking competitive environment, as the banking industry was dominated largely by a single government owned bank, State Bank of Ethiopia. Despite the efforts made to extricate banking from foreign control and to make the institution responsible to Ethiopia's credit needs, these developments did not bring about meaningful competitive environment, as banking industry was characterized by specialization and low level of business.

The establishment of privately owned Addis Ababa Bank in 1964 and its growing branch network created relatively better banking competition among commercial banks, with concentration of their branch offices in big towns and trade routes in the country.

Currently the number of banks declined to 18 from 19 due to the merger of Construction & Business Bank with Commercial Bank of Ethiopia of while the remaining 16 are private bank. Commercial Bank of Ethiopia (CBE) is the largest; controlling the majority of asset of the industry while DBE is specialized state owned Bank operates with financing developmental projects. All commercial banks offer savings and checking accounts; extend short-term loans; handle foreign enchant transactions; provide mail and cable money transfer services; participate in equity investment; provide guarantee services and perform all other commercial banking activities (Muluneh, 2015).

Ethiopia's commercial banking sector will post a steady expansion over 2017, with both loan and deposit growth continuing on a strong upward trend, according to national bank of Ethiopia report. The government's direction, via the CBE, to focus lending and investment to public enterprises generally and the regulatory requirement that a substantial portion of private sector bank's already limited lending capacity be used to purchase NBE bills equivalent to 27% of any new loan disbursements has worsen the amount of credit to be availed to the private sector (World Bank, 2014).

The structure of the banking sector is exclusive on account of the power of state-owned banks, which direct two-thirds of the local banking sector and which the government uses to set the preferred levels of lending (such as investment in specific sectors and government projects to boost economic growth). This is contrary to the trend elsewhere in Africa, where private sector banks dominate the banking sector and drive economic growth via credit to the private sector (Abereha, 2015).

Against that study showed with the establishment of private banks, Ethiopia has made good progress in expanding access to financial services. According to the 2010 survey of private commercial banks conducted by Access Capital, privately owned banks have proved to be more efficient and more profitable compared with those that are state-owned. Also according to the same survey, private Banks are well capitalized, and resilient. With a sufficiently strong capital base, profits, and corporate governance, and well-designed systems and controls, the banking sector is well placed to increase its contribution to the growth of the national economy (Admassu, 2014).

The loan book for the Ethiopian banking sector grew by a compound annual growth rate of 20.4% in the past years to ETB151.28bn in 2013 (USD7.81bn) on the back of significant credit disbursement by public sector banks. The CBE alone accounts for over 52% of the industry loan book, while collectively the three public banks account for over 68% of outstanding credit to the economy. The top five banks (CBE, DBE, Awash, Dashen, and United Bank) collectively account for over 82% of outstanding credit. This makes the Ethiopian banking sector highly concentrated banking sector in Africa (Ecobank, 2014).

In April, 2016 The National Bank of Ethiopia has directed the Commercial Bank of Ethiopia (CBE) to stop approving all private investment project loans, and ordered investors to obtain loans from the state owned Development Bank of Ethiopia (DBE) instead. This includes processed and new application requests. Investors in agriculture, manufacturing, hotels and exporters went to CBE were turned away to Development Bank of Ethiopia (DBE).

2.1.7 The Arguments for and Against Private Sector Banking Development

Legitimate concerns have been expressed about allowing domestic banking expansion and the increased entry of foreign capital into Ethiopia. Such measures could result in destabilizing disruption caused by "hot money" flows and skewed allocation of credit toward more-attractive borrowers, such as larger industrial companies that already have access to bank lending, rather than smaller-scale enterprises so-called cherry picking (Tom,2014).

As demonstrated by the 2008 global financial crisis, uncontrolled banking expansion can be highly damaging for economies, particularly within the current globalized financial system. Yet, controlled development and expansion of private sector banking, including the admission of foreign capital and operators, can deliver meaningful benefits to a country such as Ethiopia. These benefits may include improvements in the overall efficiency of the sector, the transfer of skills for employers and regulators, and greater financial stability by reducing the need for cross-border flows. Thus, although mismanaged financial development can lead to financial crises, forming policies that promote successful financial development can greatly improve the environment for economic growth (Abreha, 2015).

According to Development Bank of Ethiopia (2014) the lack of domestic saving opportunity provided by private banks and the limited available access to banks credit for small businesses

dramatically restricts economic growth potential. Public sector banks will inevitably lead investment in key developmental projects such as those involving infrastructure, but broad Expanding the banking system will create greater savings opportunities that will in turn boost funding via savings. The alternative is a country's heavy reliance on external sources, private or official value transfers such as remittances, and external borrowing. None of these approaches is within a nation's control, and thus all are unreliable. In contrast, a developed domestic savings market can be controlled and managed within a country and create a much more stable base from which investment can be made. Thus far, as the recipient of significant private and official value transfers, Ethiopia has relied less than many of its peers on external borrowing. This is strength for the country that should be preserved if at all possible, and development of a private sector banking–led savings market will be a key to maintaining this national advantage (Tom, 2014).

2.2 Empirical Review

Several studies have been carried out to explain the relationship between bank deposits, bank credits, and capital formation. Some of the studies are briefly reviewed below.

Ali et.al (2016) analyzed the impact of the Deposit Money banks' credit on investment in Nigeria. The study used Time series data of thirty-one year period 1981 to 2012 the study employed a linear regression model using Ordinary Least Square (OLS) estimation by using Deposit Money banks credit to the private sector and the Lending Rate of the Nigeria economy are used as explanatory variables while investment is the dependent variable, The empirical results of the study showed that both total Deposit Money banks, credit and Interest rate exert a positive and significant impact on investment in Nigeria. However, the result of the interest rate is at variance with the a priori expectation. Considering the empirical results, the study concludes that Deposit Money Banks' credit to the private sector should be sustained as it is a viable source of finance to the private sector of the of the Nigerian economy.

Gbenga and Adeleke (2013) investigated the relationship between savings, gross capital formation and economic growth in the Nigeria economy, between the period 1975 and 2008. The study adopted co-integration and vector error correction model VECM as the estimating technique with special reference to VAR causality test. This research work has confirmed the existence of strong linkages among growth, savings and capital formation in Nigeria, The estimation from the findings for growth revealed that there is a positive relationship between

growth and capital formation on one hand and a positive relationship between growth and savings on the other hand. The study also showed When the two variables (savings and capital formation) combine together, they have an impact on GDP. Therefore the study recommended that strong policy that would encourage savings from the grass root be established.

The finance-growth causalities have been widely investigated in the literature on finance and growth. Though it is generally accepted that finance affects economic growth and vice versa through capital formation. In this regard Njimanted et.al (2016) has investigated the interactions between financial intermediation, domestic investment and economic growth in Cameroon. This study used time series data covering a period of 40 years running from 1975 to 2014. And the study used the Vector Auto regression approach in line with the objectives of the study. The empirical result of this study showed financial intermediation doesn't have a significant effect on domestic investment in Cameroon. The study also found no causality from financial intermediation to domestic investment in Cameroon except in the case of commercial bank credit to GDP ratio. There was also no causality running from domestic investment to financial intermediation in Cameroon. Findings also revealed the significant effects of domestic investment, broad money, ratio of narrow money to broad money, Financial Intermediation Development index and Financial Intermediation Development index on Cameroon's economic growth while the effects of domestic credit to private sector, central government claims and commercial bank credit to GDP ratio are insignificant.

Okaro (2016) analyzed the effect of deposit money banks', credit on economic growth and development in Nigeria. The study adopted multiple regression approaches on an annual time series data spanning from 1981 to 2015 and estimated single equation models using Ordinary Least Square (OLS) regression framework. The study also investigated the stochastic nature of the time series by conducting a stationary test using Augmented Dicker-Fuller (ADF) test. The findings of the study indicated that total credit by Deposit money banks' to all sectors of the economy is positively and significantly related to economic growth and development. However, while DMBs credit to private sector drives growth, Deposit money banks' credit to public sector frustrates growth due to crowding out effect.

The paper recommends that deposit money banks' should be encouraged to direct their credit to priority sectors of the economy. Secondly, the government should reduce its domestic borrowing

in order not to crowd out private sector borrowing. The paper concludes that Deposit money banks' credit is a key driver of economic growth and development in Nigeria.

Alex (2012) has conducted the role of banks in capital formation and economic growth: The case of Nigeria for the period of 1980-2009. This study employed the Ordinary Least square method in carrying out the research. The explanatory variables employed include Commercial Banks Deposit Liability, Maximum Lending Rate, Commercial Banks' Credit and Investment by banks in Nigeria. The dependent variables are Gross Fixed Capital Formation and Gross Domestic Product, which is a measure of a nation's economic performance – economic growth in this instance from the various test carried out it was found out that Commercial Banks Deposit Liabilities is elastic to Gross Fixed Capital Formation in Nigeria.

Orji (2012) investigated the determinants of bank savings in Nigeria as well as examine the impact of bank savings and bank credits on Nigeria's economic growth from 1970- 2006. The study adopted two impact models: Distributed Lag-Error Correction Model (DL-ECM) and Distributed Model. The empirical results showed a positive influence of values of GDP per capita, Financial Deepening, Interest Rate Spread and negative influence of Real Interest Rate and Inflation Rate on the size of private domestic savings. Also, a positive relationship exists between the lagged values of total private savings, private sector credit, public sector credit, interest rate spread, exchange rates and economic growth. Therefore, the study recommends, among others, that government's effort should be geared towards improving per capita income by reducing the unemployment rate in the country in a bid to accelerate growth through enhanced savings.

Capital formation is one of the major determinants of economic growth. There is a conventional perception that the most pertinent obstacle to economic growth is a shortage of capital. Sunny (2016) applied Harrod – Domar model to Nigerian economic development and tested if it has a significant relationship with Nigerian economy. The work studies the extent to which capital formation affects economic growth in Nigeria. Making use of the multiple linear regression models through the ordinary least square (OLS) method, the impact of capital formation on Nigeria's economic growth was examined. The analysis discovered that there is a significant positive relationship between capital formation and economic growth in Nigeria both in the short-run and long-run. It also discovered that the rate of savings is not significant to enhance

24

economic growth. The paper recommended based on the econometric results that the government should encourage savings, create conducive investment climate and improve the infrastructural base of the economy to boost capital formation and hence promote sustainable growth.

The impact of capital formation on the economic growth of Nigeria was studied using multiple regressions technique by Kanu (2014). It was ascertained that in the short run, gross fixed capital formation had no significant impact on economic growth; while in the long run; the VAR model estimate indicates that gross fixed capital formation, total exports and the lagged values of GDP had positive long-run relationships with economic growth in Nigeria. It was equally ascertained that there exists an inverse relationship between imports, Total National Savings, and economic growth; while GDP was seen to have a unidirectional causal relationship with export, Gross fixed capital formation, Import and total national saving. The study, therefore, recommended that the federal government of Nigeria should reprioritize needs by cutting down on bogus/ bourgeoning recurrent expenditures which are about 70% of total expenditure profile. This will help free up the much-needed savings for investments in infrastructural development.

Finally, as per the researcher's knowledge, there is only one research that has been conducted on the role of bank deposit mobilization and credit financing on capital formation in Ethiopia.

Muluneh (2015) investigated the role of bank deposit mobilization and credit financing in Capita Formation of the banking industry in Ethiopia. The study was undertaken based on an ordinary least square (OLS) model by employing annual time series data of 21 years for the period of 1994 to 2014. The study used Gross fixed capital formation as the dependent variable, representing bank credit, bank deposit, bank investment as independent variables, and national saving and real interest rate as control variables. The findings of analysis showed that bank deposit, bank credit, and national saving have a great role in capital formation in Ethiopia since the coefficients of the variables are statistically significant. However; bank investment and real interest rate become an insignificant effect on capital formation in Ethiopia since the coefficients of the variables are turned out to be statistically insignificant.

The study recommended, Ethiopia needs to continuously build a strong cooperation between banks and all concerned government bodies in order to take the major role to sustain the saving culture through financial literacy, should design and implement credit policy that promotes capital formation in the economy in order to finance medium and long-term projects, and also

enhance banks to contribute significant role on security portfolio investment in a country that leads to capital formation which is an essential component for economic development and growth.

In Summary, the evidence from the above theoretical and empirical literature review shows that the link between, bank deposit mobilization and credit financing in Capita Formation rate is mixed. Some studies found that existence of strong linkages among the listed variables, contrary to this result; others found an insignificant impact on saving rate, on capital formation. The causality between variables is different for different studies. But due to the limitation of studies on the area cannot conclude for Ethiopia.

2.3 Conceptual Frame Work

Based on theoretical and empirical discussions it is appropriate to provide a diagrammatic representation of conceptual framework that links those variables that are employed for this study. The conceptual frame work in Figure 1 indicate Capital Formation is dependent on the financial development represented by Public/private Bank Deposit, and credit, Bank Investment while Capital Formation is expected to be enhanced when some macro economic variables is liberalize. Hence, this relationship is captured with the use of macroeconomic variables (National saving, Real interest rate and inflation) as a control variable indicating the effect.

Dependent Variable

Gross Capital Formation

- Gross fixed capital formation as a percentage (%) of GDP

Independent Variable

Financial Development

- Public /private Bank Deposits to GDP (BD/GDP)
- The ratio of public / private bank credit to GDP
- The ratio of Bank Investment as a percentage (%) of GDP

Control Variables

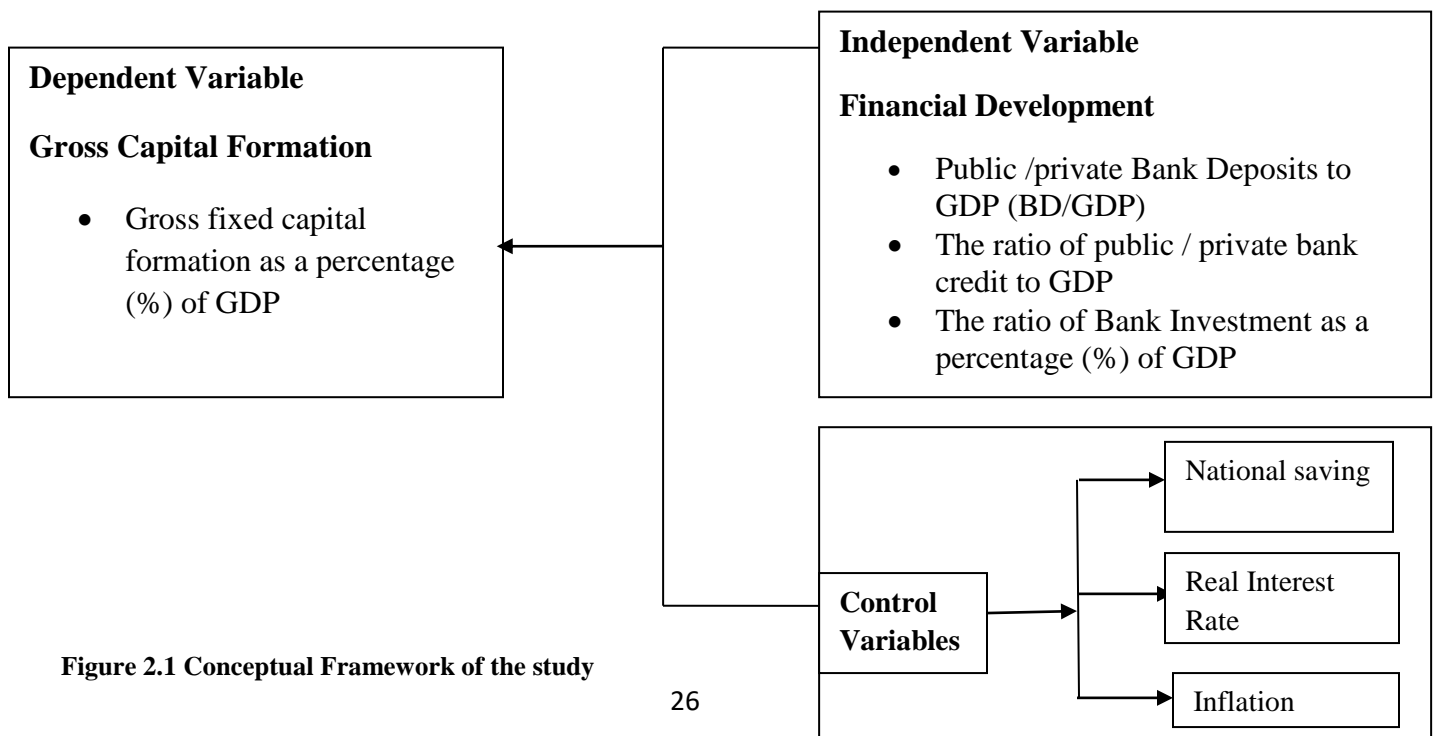National saving

Real Interest Rate

Inflation

Figure 2.1 Conceptual Framework of the study

26

3 RESEARCH METHODOLOGY

This chapter highlights methodology of the Research, Research Design, Data Source, Model specification and methods of data analysis.

3.1 Research design

A research design defined as a plan of action adopted by the researcher in carrying out the research. The main objective of this study is to evaluate the role of bank deposit mobilization and credit financing on Capital Formation in Ethiopia. Hence, this study implements longitudinal research design identifying the relationships between the level of capital formation and explanatory variables using time serious data.

3.2 Data type, Source, and Method of data collection

For the purpose of analyzing the role of bank deposit mobilization and credit financing on Capital Formation in Ethiopia secondary data source from 1991/92 to 2015/16, is used. The research was employing quantitative research approach by using secondary data because it is the best approach to use to test a theory or explanation. The data obtained and organized from different governmental organizations that are responsible for the collection and organization of the variables; the organizations are namely: National bank of Ethiopia, Central Statistical Authority of Ethiopia, MOFED (Ministry of Finance & Economic Development), from central bank annual financial report of Banks operating in Ethiopia and twenty-five year (1991-2016) of time series data are collected.

3.3 Method of Data Analysis

The study employed a time series model in order determine the impact of bank deposit mobilization and credit financing on Capital Formation in Ethiopia. To analyze the data, the study used statistical package EVIEWS version 9. Based on this, the study uses both the descriptive and econometric methods of data analysis. Graphs and tables are descriptive statistical methods used to briefly explain trends of the variables used in the model and some descriptive statistics summaries such as mean, median, minimum values, maximum values and standard deviations are also included. The econometrics analysis includes unit root, co integration tests, long run and short run analyses were performed.

3.4 Econometric Model specification

In the model specified below, the researcher attempts to investigate the role of bank deposit mobilization and credit financing on Capital Formation in Ethiopia Within the period of (1991-2016).

The study used a time serious model by estimated single equation models on the basis of previous studies of (Okaro et.al. 2016). In order to get a deeper insight about the capital formation in Ethiopia, the study uses the role of private and state-owned banks separately as private/public bank deposit mobilization and public/private sector credit allocation to the capital formation of Ethiopia. The main variables under consideration are taken from theoretical setups and empirical evidence in different countries. The dependent variable of study is specified as:-

$GFCF_t = f$ (Public Bank Deposit, Private Bank Deposit, Public Bank Credit, Private Bank Credit, Bank Investment, National Savings, Real Interest Rate, inflation rate)

$GFCF_t = \beta_{t1} + \beta_{t2}PUBD + \beta_{t3}PBD + \beta_{t4}PUBC + \beta_{t5}PBC + \beta_{t6}BI + \beta_{t7}NS + \beta_{t8}RIR + \beta_{t9}INFR + +\varepsilon_t \dots$ (Eq.1)

Where, GFCF - Gross Fixed Capital Formation

       PUBD- Public Banks' Deposit

       PBD - Private Banks' Deposit

       PUBC- Public Banks' Credits

       PBC -   Private Banks' Credits

       BI - Banks' Investment

       NS- National Savings

       RIR- Real Interest Rate

       INF- Inflation rate

   βt1 - Coefficient of Intercept, βt2, βt3, βt4-Coefficient of Independent variables

   βt5, βt6, βt7-Coefficient of control variables,

   Єt -Error Term

The control variable is a variable that is not the focus or planned as part of a research study but its existence has a certain impact over Dependent Variable that cannot be ignored in which it is

included in the research model testing together with other Independent Variables. Hence it is called control variable i.e. it is kept under "controlled", "monitored" or "constant" to observe whether it has minimal impact on the relationships between dependent and independent variable (Agu, 2004). Accordingly, the study will use $\beta t7$, $\beta t8$ and $\beta t9$ - Coefficient as a Control Variables.

Dependent Variable

Gross Fixed Capital Formation:

Capital accumulation or formation refers to the process of amassing or stocking of assets of value, the increase in wealth or the creation of further wealth. The capital formation can be differentiated from savings because accumulation deals with the increase in the stock of needed real investments and not all savings are necessarily invested. Recent literature has confused investment with capital formation. Investment can be in financial assets, human (capital) development, real assets that can be productive or unproductive. The increase in investment through non-financial assets has been held to increase value to the economy and the increase in the gross domestic product through a further increase in employment (Ugwuegbe, et.al 2013).

Gross fixed capital formation as a percentage (%) of GDP consists of Nation's investments, without deducting disposals, in fixed assets during a given period. It also includes certain additions to the value of non-produced assets realized by producers or institutional units. Fixed assets are tangible or intangible assets produced as outputs from production processes that are used repeatedly, or continuously, for more than one year (Muluneh, 2015).

Explanatory Variables

Real Interest Rate (RIR): - Theoretically, interest rate changes are subject to potentially offsetting positive substitution and negative income effects. The substitution effect is that a higher interest rate raises the current price of consumption relative to future price. This reduces current consumption and increases saving. The income effect is that if the households are net lenders, an increase in interest rate will increase lifetime income, and so increase present consumption by decreasing saving. In this case, if the substitution effects out way the income effect, aggregate saving will rise and vice (Abate, 2016).

GDP: - is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of products. It is calculated without making a deduction for depreciation of fabricated assets or for depletion and degradation of natural resources. It is expected that per capita income has positive impact savings.

Inflation (INF): - which is a general rise in prices measured against a standard level of purchasing power. There are many measures of inflation depending on the specific circumstances. The consumer price index (CPI) measures the percentage change through time in the cost of purchasing a constant basket of goods and service representing the average pattern of purchases made by a particular population group in a specific time period. Inflation is expected to have a positive or negative impact on saving.

Public /private Bank Deposits to GDP (BD/GDP): - Bank deposits consist of funds placed into banking institutions for safekeeping. The account holder has the right to withdraw deposited funds, as set forth in the terms and conditions governing the account agreement.

Deposits are made to deposit accounts such as demand, time and saving deposits at domestic deposit money banks. Deposit money banks include commercial banks and other private financial institutions that accept transferable deposits. (Njimanted, et.al, 2016)

The study uses bank deposit as a percentage of GDP Size indicators evaluate the value of bank deposits with respect to the economy of the country.

Bank credit: - is the total borrowing capacity banks provide to borrowers. A business or individual's bank credit depends on the borrower's ability to repay and the total amount of credit available in the banking institution.

The ratio of public / private bank credit to GDP is a common measure of the provision of credit to the economy, as well as of banking depth. Often, this indicator is supplemented by information on the ratio of loans to total bank deposits. Where available, the volume of finance rose through the issuance of bonds and money market instruments should supplement information on bank credit. Analyzing trends in those indicators should reveal the overall degree to which the banking sector provides credit to firms and households. It is also useful to assess the sect oral distribution of private sector credit to gauge the alignment of bank credit with the distribution of domestic output. Therefore, the relative proportion of total credit going to

agriculture, manufacturing, and services would be relevant information in evaluating the adequacy of the level of credit provided to the economy. (Njimanted, et.al, 2016)

National saving: - Saving is the other side of consumption vital for the development process of a nation. Saving what is left after consumption governs the growth path of a country. The more the peoples of the nation saves the more resources are available for investment thereby accelerating economic growth. It is generally equal to a nation's income minus consumption and government purchases. National savings is the sum of private and public savings. (Okaro, 2015)

Banks' Investment: - Banks offer services, for instance, accepting deposits, making business loans, and offering and participating in basic investment products.

National Bank of Ethiopia made Directive amendment No SBB/60/2015 to ensure issues of limitation on investment of banks; Investment related activities of banks require sound and prudent practices to effectively manage risks; Diversification of business activities and setting business limits of investment are essential tool for risk managements; There is a need to ensure that banks focus on their core business which debt financing managed at arm's length, Therefore, in line with power vested in it by article 22(1) and 59(1) of banking business proclamation No.592/2008, the NBE has issued this directive Private Banks to purchase government bonds equivalent to 27 percent of their annual loans to help fund development in the country since banks are meant to contribute toward development projects..

The ratio of Bank Investment as a percentage (%) of GDP: - refers to bank's investment on NBE-Bill and Government bonds of aggregate outstanding balance as of a given balance sheet date as the percentage of GDP.

3.5 Estimation Procedure

UNIT ROOT TESTS

Before starting the co-integration tests, it is essential to check the stationary properties of time series data. Broadly speaking, a stochastic process is said to be stationary if its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed (Gujatati, 2008). Therefore, to overcome the incidence of

non- stationary in this study, the time-series properties of the variables is investigated using the standard Augmented Dickey-Fuller (ADF) unit root tests.

The test results are achieved assuming the presence of unit root (non stationary of the variable) in the null hypothesis (H0) and no unit root (stationary of the variable) in the alternative hypothesis (Ha). In this regard, decisions were made based on the calculated statistic and McKinnon's critical value in comparison with the critical values. A variable was considered non stationary if its calculated value was less than the Mackinnon's critical value and we justify the existence of a unit root. On the other hand, a variable was considered stationary if its calculated value was higher than the critical value and this confirmed the absence of unit root. These values were generated using the ADF test in E-view 9.

CO-INTEGRATION

Engle and Granger (1987) defined Co-integration as a condition where two or more variables are associated to form equilibrium relationships over the period of time. Furthermore, even if the time series data have unit root (non-stationary) variables, their linear combination can be stationary and they will move closer together over time to make their differences stationery. If two variables have no co-integration; it reveals that the nonexistence of long-run relationship between the two variables.

The Engle-Granger (E-G) method requires generate the residual from the estimated static equation and test its stationary. By doing so we are testing whether the deviation (captured by the error term) from the long run are stationary or not. If the residuals are found to be stationary it implies that the variables are co-integrated. These residuals would then be subjected to a Dickey-Fuller or augmented Dickey-Fuller test. If the null hypothesis of a unit root in the DF test regression residuals is not rejected, it would be concluded that a stationary combination of the non-stationary variables has not been found and thus that there is no co-integration. On the other hand, if the null is rejected, it would be concluded that a stationary combination of the non-stationary variables has been found and thus that the variables are co-integrated (Enders, 1996).

Long Run Model Specification

The purpose of OLS estimation is to detect the spurious regression. If the results found spurious, they will not be able to further processing or use. Such results if used to apply wrong results will direct to formulate policies in the economy. Long Run OLS estimation result shows in model

Gross capital formation determined by how many percents of R-squared by the independent variables as well as by what percentage of Adjusted R- Squared (coefficient of determination) measures the proportion or percentage of the total variation independent variable explained by the regression model. The specification of the model can be written as follow:-

$$GCF= \beta t1+\beta t2PUBD+\beta t3PBD+\beta t4PUBC+\beta t5PBC+\beta t6BI+\beta t7NS+\beta t8RIR+\beta t9INFR+\varepsilon t. \text{ (Eq.2)}$$

Short Run Model Specification

Economic theory is mostly interested in equilibrium conditions and has little to say about the nature of economic configurations in disequilibrium. While economic theory proposes that certain macro variables have equilibrium relationships with each other, the data does not confirm that these hold at all times. To overcome this difficulty, economists make a distinction between the short-run and the long-run, (Berhane, 2016).

ECM has been used to find out the short-run dynamics. The term 'error correction models' applies to any model that directly estimates the rate at which changes the independent variable return to equilibrium after a change in an independent variable. The ECM model has a nice behavioral justification in that it implies that the behavior of dependent variable is tied to independent variable in the long run and that short-run changes independent variable respond to deviations from that long-run equilibrium (Abdulsalam, 2013).

 Short Run model specification is given as:-

$$DGCF=\beta t1+\beta t2DPUBD+\beta t3DPBD+\beta t4DPUBC+\beta t5DPBC+\beta t6DBI+\beta t7DNS+\beta t8DRIR+\beta t9DINFR +ECM (-1) \text{ (Eq.3)}$$

Diagnostic Test

Testing robustness of the model is performed using the diagnostic test. After estimation is done, it is must to check whether the model has achieved the desired properties. In this study, various diagnostic checks are performed. Hetroscedasticity, Serial correlation, Normality test and Model Stability test are performed.

4 RESULT AND DISCUSSIONS

This section of the study concerned on analysis and interpretation, which contains both descriptive and econometric analysis. Under the descriptive statistics trends and performances of dependent and independent variables are discussed using tables and graphs. The econometric analysis begins by the necessary tests such as stationary tests, Co-integration test and diagnostic tests. After that both the long run and short run models are estimated using OLS and Error Correction respectively. After estimation has been made the interpretation and discussion are continued based on the model results.

4.1 Descriptive Analysis

4.1.1 Trend of Gross Capital Formation

In order to achieve sustained economic growth in the process development, it's clear that the role of capital formation requirements has been well documented. Countries that are able to accumulate high level of capital tend to achieve faster rates of economic growth and development Teklu (2014) Gbeng (2013) Defines capital formation as the total change in the value of fixed assets in the economy in addition to fixed assets either for replacing or adding to the stocks, it refers to the increase in the fixed capital stocks of the capital formed.
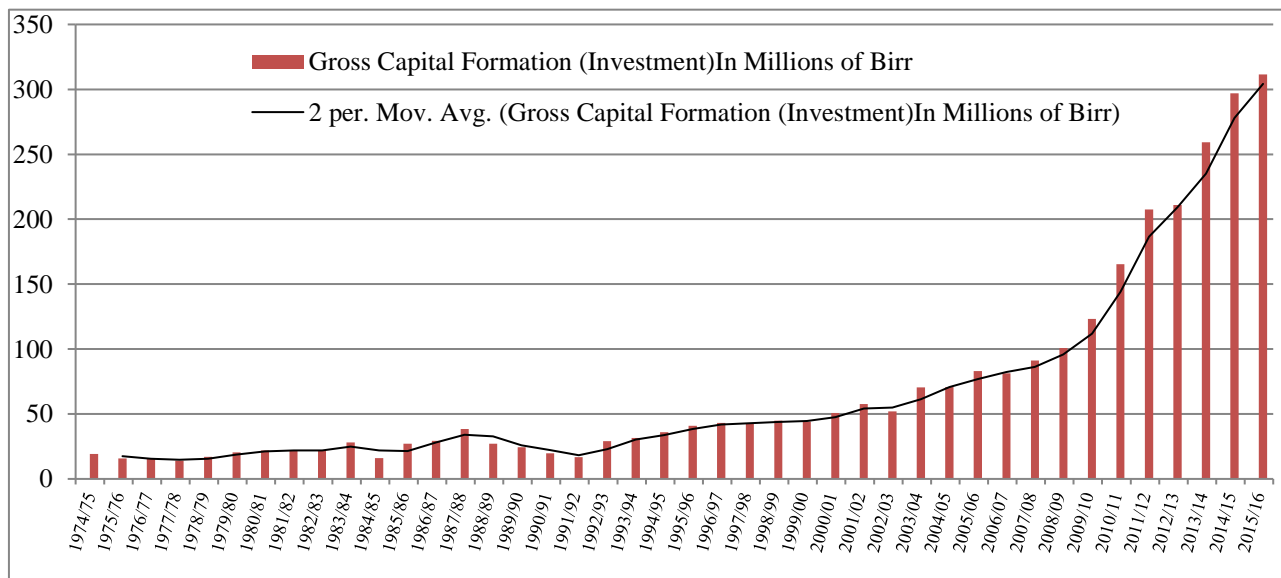
Source: Author's computation based on NBE Data (1974/75-2015/16)
Figure 4. 2 Trends of Gross capital formation

34

Figure 4.1 depicts that Capital formation in Ethiopia registers many ups and downs during the sample periods, as figure indicates that Gross capital formation shows stable till 1983/84 and turns down to fluctuate up to 1990/91. From 1991 the gross capital formation shows a continuous increment this because the regime has involved in massive investment program on various developmental sectors such as hydroelectric power plant (for example, Great Renaissance Dam, Gilgel Gibe Dams, Tanabeles and Tekeze Dams), road, railways, sugar industry, telecom and the like in which private sector could not have incentive and capacity to deliver. According to National Bank of Ethiopia report In the EPRDF regime, both public and private investment share out of GDP has increased than ever to 36%.However, compared to the country's requirement, investment is still very low in Ethiopia.
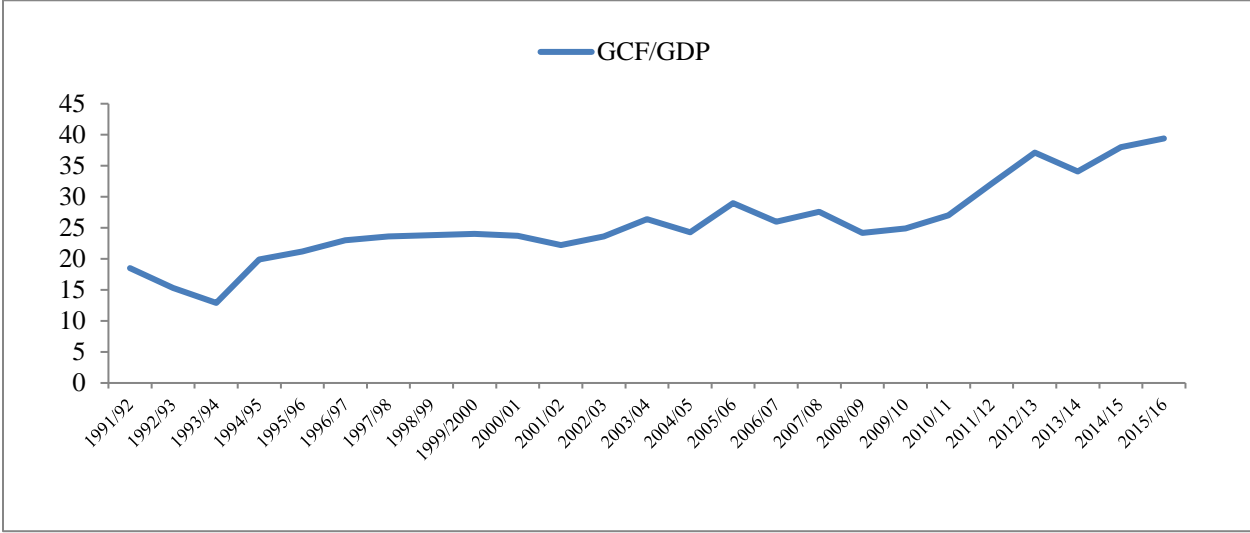
Source: Author's computation based on MOFED data (1991/92-2015/16)

Figure 4.3 Gross capital formation to Real GDP ratio

It is important to see the share of GCF as a percentage of GDP in Ethiopia. Accordingly As we see from the above figure gross capital formation as percentage of GDP is no consistent throughout the periods. Relatively from 1992/93-2000/01 the rate of Gross capital formation as a percentage of GDP was stable but starting from year 2000 gross capital formation as a percentage of GDP exhibited an up and down trend.

35

4.1.2 Bank Deposit in Ethiopia

One of financial institutions in the world that give financing services is commercial banks. Commercial banks are profitable financial institutions that give financial service to the body in need of the service. They accept money from the depositors and lend it to the borrowers. Thus, for commercial banks to lend there have to be deposits in their treasury.
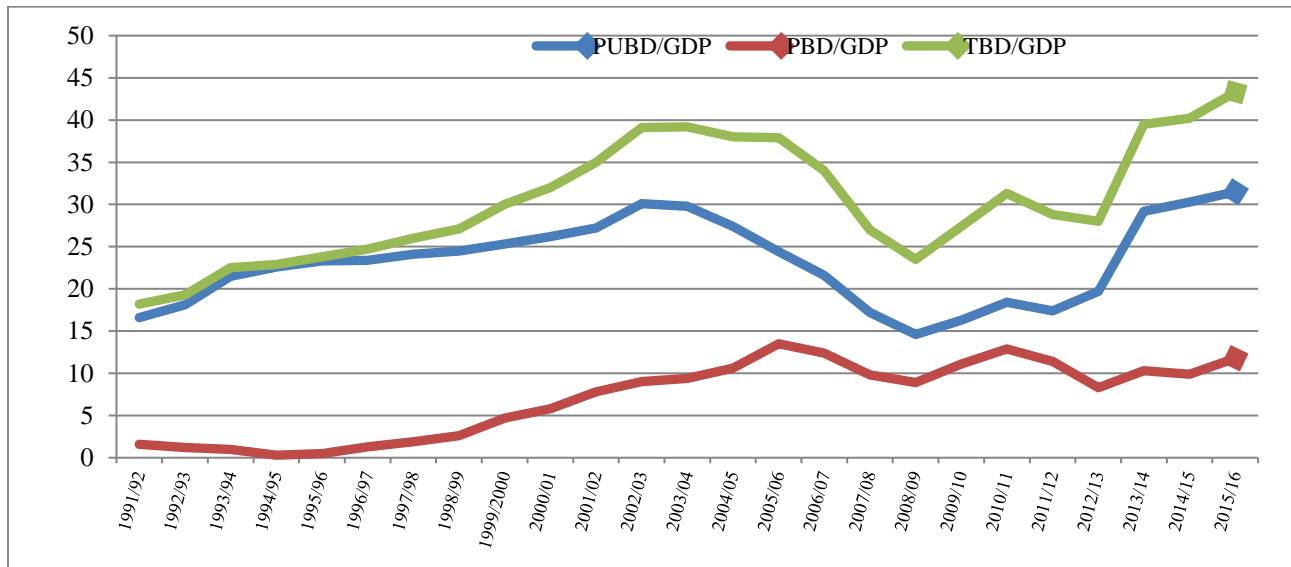
Source: Author's computation based on NBE Data (1991/92-2015/16)

Figure 4.4 Public and Private Bank Deposit trend

In Ethiopia, deposits mobilized by Public Banks' and Private Banks' have been continuously increasing through time, although the rate varies from year to year. Compared with the industry trend, Public Banks' total deposit as a percentage of GDP has been growing with an average growth of 23% while that of Private Banks' total deposit as a percentage of GDP has been growing with an average growth of 7.4% during the period (1991/92-2015/16). Correspondingly, the banking industry as a whole grew by an average growth rate of 30.6% during the same period, indicating that Public Banks' performance in deposit mobilization has large contributions to the industry level growth rate. Despite this consistent increase in deposits, it is realized that the year 2003/04 up to 2015/16 shows a slow growth. At that time there was less public awareness to savings, less private Bank entrance to the financial industry, less branch accessibility to the society and little financial technologies.

4.1.3 Bank Credit in Ethiopia

Credit system is essential in transforming saving from various sources of financial assets. The financial assets can be a stock of transferable funds that can be used by financial institutions for lending to the various sector of the economy. In this manner, Banks credit system can contribute to the country capital formation and economic growth in general (Itana, 2004).
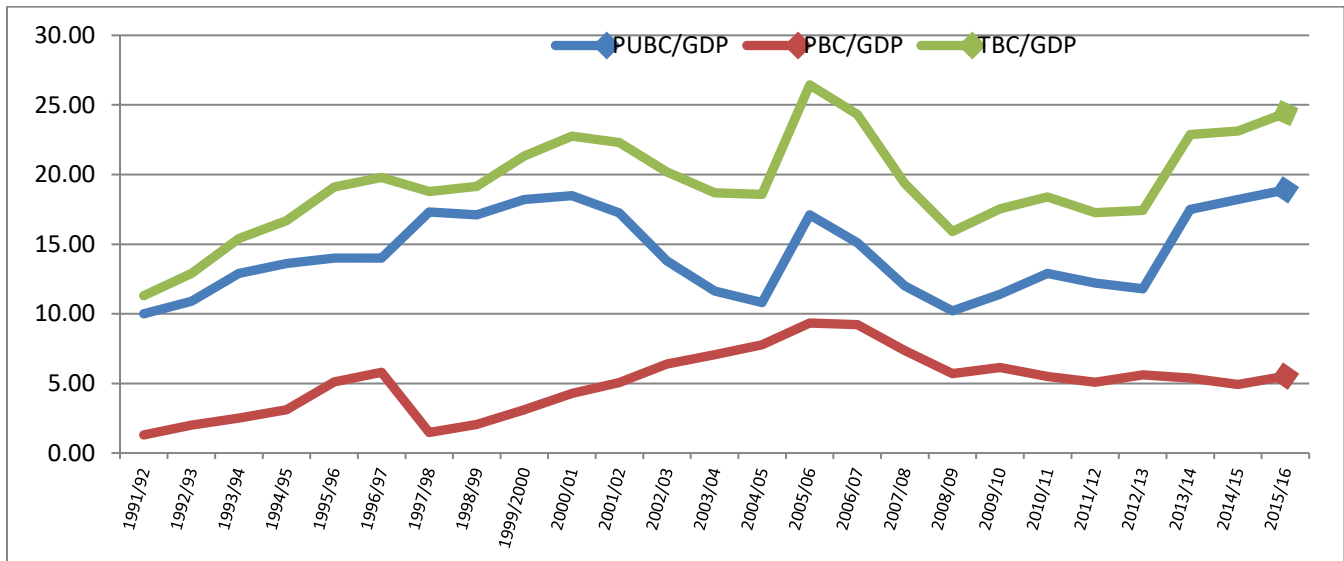
Source: Author's computation based on NBE Data (1991/92-2015/16)

Figure 4.5 Public and Private Bank credit Trend

According to the above graph, during the review period, Public Bank credit took a higher share from total Credit of commercial banks and took around 73%this might be because Credit has been highly regulated by commercial banks in order to finance the country medium and long term projects while ,that of private Banks took 27%. Even though the public Bank credit showed an up and down trend, it emerged to play an active role in provision of investment attributed 11% of the GDP. Until the period of 2008/09 Private Banks credit trends was stable but after 2009 private banks credit declined this might be with NBE policy which requires all private banks in Ethiopia to purchase NBE Bills to the amount of 27% of the disbursement towards loans and advances. The Bills have a maturity period of 5 (five) years and bear interest at the rate of 3% per annum, payable on an annual basis.

37

4.1.4 Trend of Saving and Investment in Ethiopia

In Ethiopia, the rate of growth of investment and saving are not equal. According to MOFED, Rate of Investment has reached on average 26.3% of GDP where as saving has reached on average 30.1% of GDP. The trend of saving as a ratio of GDP and investment as a percentage of GDP is summarized as follows: -

Table 4.1 Saving and Investment Trend

Year	NS/GDP (ratio in %)	I/GDP (ratio in %)	S-I Gap/GDP (ratio in %)
1991/1992	12.6	12.9	(0.3)
1992/1993	23.1	19.9	3.2
1993/1994	20.5	21.2	(0.7)
1994/1995	30.0	23	7.0
1995/1996	28.4	23.6	4.8
1996/1997	25.4	23.8	1.6
1997/1998	27.5	24	3.5
1998/1999	16.0	23.7	(7.7)
1999/2000	20.0	22.2	(2.2)
2000/2001	22.2	23.6	(1.4)
2001/2002	19.1	26.4	(7.3)
2002/2003	20.2	24.3	(4.1)
2003/2004	25.7	29	(3.3)
2004/2005	24.1	26	(1.9)
2005/2006	22.2	27.6	(5.4)
2006/2007	27.5	24.2	3.3
2007/2008	23.2	24.5	(1.3)
2008/2009	23.0	24.9	(1.9)
2009/2010	24.8	32.1	(7.3)
2010/2011	31.4	32.1	(0.7)
2011/2012	30.6	37.1	(6.5)
2012/2013	28.1	34.1	(6.0)
2013/2014	30.3	38	(7.7)
2014/2015	31.4	39.4	(8.0)
2015/2016	32.4	38.5	(6.1)

Source: - Author's computation based on MOFED data (1991/92-2015/16)

Saving-investment gap was 0.3 percent of GDP in 1991, which has increased to about 6.1 percent in 2016. From this saving-investment gap, one can see that national saving in Ethiopia has becoming less and less to support huge growth in investment recently. Widening saving-

investment gap implies that national saving mobilization is not sufficient to finance investment and fully financing investment depends on foreign borrowing.

4.2 Summary of Descriptive Statistic

Table 4.2 demonstrates the summary descriptive statistics contains different characteristics of data used in the analysis. The summary of descriptive statistics includes the mean, standard deviation, minimum and maximum of one dependent variable (GCF) and Eight explanatory variables (PUBD, PUBC,PBD,PBC,BI,NS,RIR AND INF).

Table 4.2 Summary Statistics

variables	Observations	Mean	Median	Std. Dev.	Maximum	Minimum
GCF	25	26.8	24.5	6.4	39.4	12.9
PUBD	25	23.2	23.4	5.0	31.5	14.6
PBD	25	7.4	8.9	4.9	17.4	0.3
PUBC	25	15.0	14.5	3.4	21.1	10.0
PBC	25	5.3	5.6	2.4	9.3	1.3
BI	25	7.8	5.9	7.0	37.4	2.3
NS	25	25.2	24.2	6.0	35.1	13.0
RIR	25	0.2	0.6	1.7	3.6	-4.6
INF	25	9.3	7.4	13.7	55.2	-10.8

Table 2 shows the summary descriptive statistics contains different characteristics of in the analysis. The standard deviation shows how much dispersion exists from the average value. A low standard deviation indicates that the data point tends to be very close to the mean, whereas high standard deviation indicates that the data point is spread out over a large range of values. As shown in the summary statistics, all have low standard deviation except inflation. This shows stability in the long run relationship between Gross capital formation and explanatory variables.

As shown in the above Table, the average capital formation is 26.8 percent as a percentage to GDP, and the standard deviation of gross fixed capital formation accounts 6.4 percent.

With regard to explanatory variables, the mean of public bank deposit is found to be 23.2 percent, indicating that on average public commercial banks has a DEP/GDP ratio of 23.2 percent per year. Further, deposits which can be mobilized private commercial bank, as measured by the ratio of DEP / GDP is 7.4 percent meaning private banks collect the deposit from the public on average 7.4percent. Regarding Credit allocation by public and private banks, the mean of public bank credit found 15 percent, while that of private bank credit the mean value is 5.3 percent. The Standard deviation value of both showed of 3.4 and 2.4 percent respectively. This deviation shows that fluctuation from its mean.

And, as it is shown in the descriptive statistics results of control variables, on average the ratio of NS/GDP is about 25.2% over the sample period. With regard to real interest rate, the ratio of has a mean of 0.2 percent which showed a minimum average amount. In relation to inflation rate on average, the mean value of inflation rate is 9.3percent.

This descriptive analysis supports the regression result that on average the public bank deposit and public Bank credit over the sample period per GDP shows an upward trend over the sample period and indicated that Public banks have the largest financial intermediaries' role in Ethiopia because the role in mobilizing domestic resource in raising the national saving was remarkable.

4.3 Economic Results

4.3.1 Unit Root Test

Unit root test is the starting point of the analysis of time series variables before any meaningful regression is performed. The variables used in the analysis need to be stationary and or should be co-integrated in order to infer meaningful relationship from the regression. Testing for stationary of our time series ensures that the variables used in the regressions are not subject to spurious correlation/ regressions. Accordingly, stationary properties of time series are investigated by testing for unit roots and there are several methods for testing for stationary. Thus, this study used the commonly used Augmented Dickey-Fuller (ADF) unit root tests with and without a trend at both level and first difference.

 The null hypothesis in these tests is that the series under investigation has a unit root. On the other hand, the alternative hypothesis is that the series is stationary. A variable is stationary if

the absolute terms ADF statistics greater than the absolute term of critical value for rejection of hypothesis for a unit root. Otherwise, it is non stationary (Gujarati, 2008).

The time series behavior of each series using the ADF test is presented in table (3). The unit root tests conducted revealed all variables have unit root in their level, That is, it is not possible to reject the null hypothesis of unit root both with and without trend in the auxiliary regression of unit root. Thus have to be differenced once to achieve stationary. The ADF test at their first difference results shows that all the critical values are less than the ADF test statistics; therefore we can reject the null hypothesis of having a unit root problem. Running ADF tests for change in variables indicates that all variables are integrated of order one (I (1)), i.e. They need to be differenced once to attain stationary. Therefore, we can conclude that all the variables become stationary at their first difference. Thus, the stationary that the study conducted, suggest that the model (2) should be estimated, using the differenced variables.

A time series is considered to be stationary if means and variance are independent of time. If the time series is non- stationary, that is, having a mean and or variance changing over time, it is said to have a unit root (Johnnes et al, 2011). In econometrics as the most time series data exhibit unit root problem.

Table 4.3 Unit Root Test

| Variables | Augmented Dickey-Fuller test statistic (ADF Test) | | | | | | | |
| | LEVEL | | | | FIRST DIFFERENCE | | | |
	Intercept	Critical value at 5%	Intercept and Trend	Critical value at 5%	Intercept	Critical value at 5%	Intercept and Trend	Critical value at 5%
GCF	-1.498	-2.992	-2.557	-3.612	-6.268	-2.998	-6.151	-3.622
PUBD	-1.366	-2.998	-2.324	-3.633	-6.266	-2.998	-6.209	-3.622
PBD	-1.374	-2.992	-2.479	-3.612	-5.987	-2.998	-4.177	-3.645
PUBC	0.178	-2.992	-1.747	-3.612	-4.320	-2.998	-4.601	-3.645
PBC	-1.874	-2.992	-2.322	-3.612	-4.508	-2.998	-4.312	-3.622
BI	-4.918	-2.992	-4.807	-3.612	-7.647	-2.998	-7.489	-3.622
NS	-3.200	-2.992	-3.767	-3.612	-7.141	-2.998	-5.487	-3.691
RIR	-2.940	-2.992	-2.899	-3.612	-6.260	-2.998	-6.110	-3.622
INF	-4.054	-2.992	-4.510	-3.612	-7.062	-3.005	-6.901	-3.633

4.3.2. Diagnostic Tests of the Model

To guarantee the estimation results and inferences are trustworthy, the study applied all the necessary diagnostic tests on the model like stationary, normality, serial-correlation, multicollinearity, heteroscedasticity and Goodness of Fit Test.

Test for Heteroskedasticity

The presence of Heteroscedasticity has been checked for the efficiency model to ensure that the standard errors are not wrong and any inferences made could not be misleading. It is assumed that the errors are homoskedastic or their variance is constant. The null hypothesis is the error terms are homoskedastic. Breusch-Pagan-Godfrey test has been made, to ensure that this assumption is no longer violated. The p-value of both the F- and$\chi2$ (_LM') versions of the test statistic and the p-value of Scaled explained SS must be higher than 0.05 to reject the null hypothesis of heteroskedasticity. It is evident that table 4 the p-value exceeds the critical value which rejects the assumption of heteroskedasticity.

Table 4.4 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.335101	Prob. F(9,14)	0.9480
Obs*R-squared	4.253777	Prob. Chi-Square(9)	0.8939
Scaled explained SS	1.720680	Prob. Chi-Square(9)	0.9952

Test for Autocorrelation

It is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are serially correlated. A test of this assumption is therefore required to ensure that the error terms are independent of each other. Durbin Watson (DW) statistic is 1.9. This manifests the absence of serial correlation among the errors. Moreover, the serial correlation Lagrange Multiplier (LM) test has P-value of F-statistic and Observed R-squared 78% and 62% respectively, which is far from 5%. As a result, the null hypothesis of no autocorrelation is not rejected. So, the model has qualified the test comfortably that makes the estimation of the coefficients valid.
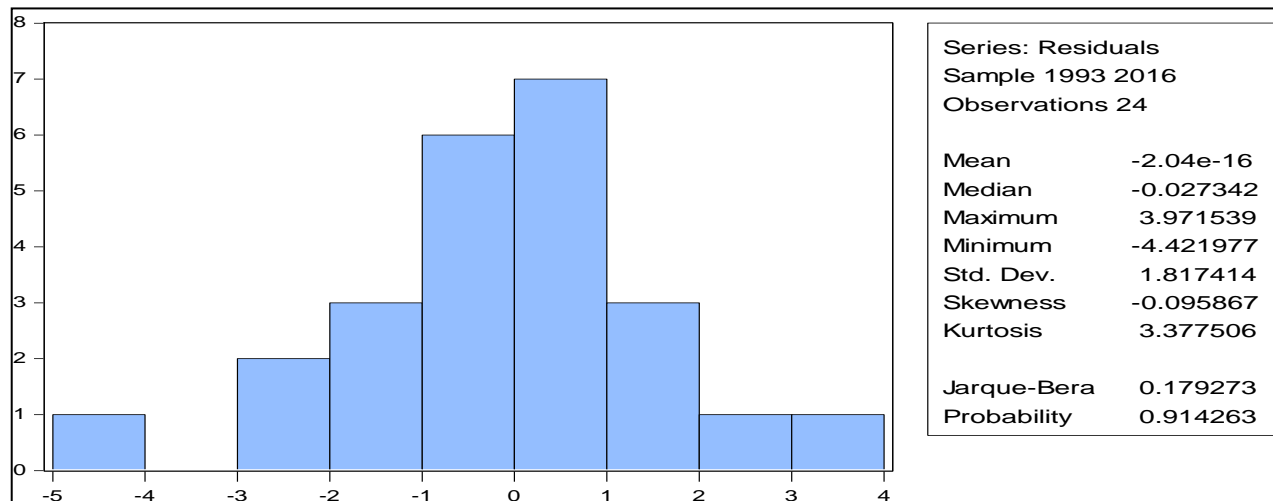
Table 4.5 Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.247984	Prob. F(2,12)	0.7843
Obs*R-squared	0.952564	Prob. Chi-Square(2)	0.6211

R-squared	0.039690	Mean dependent var	4.63E-17
Adjusted R-squared	-0.840594	S.D. dependent var	1.817414
S.E. of regression	2.465658	Akaike info criterion	4.949647
Sum squared resid	72.95361	Schwarz criterion	5.538674
Log likelihood	-47.39576	Hannan-Quinn criter.	5.105916
F-statistic	0.045088	Durbin-Watson stat	1.902163
Prob(F-statistic)	0.999994		

Normality Test

The fifth OLS assumption dictates that the errors should be normally distributed around the mean. The histogram presented in graph 5 provides useful graphical representation of the data. As the result indicates Jarque-Bera is statistically significant because its corresponding p-value, 0.91, isgreater than the standard p-value 0.05. Therefore, it is possible to generalize in the way that theresiduals are normally distributed and do not have potential problems on the specified model.

Figure 4.6 Jarque-Bera test for Normality

Series: Residuals
Sample 1993 2016
Observations 24

Mean	-2.04e-16
Median	-0.027342
Maximum	3.971539
Minimum	-4.421977
Std. Dev.	1.817414
Skewness	-0.095867
Kurtosis	3.377506
Jarque-Bera	0.179273
Probability	0.914263

Test of Multicolinearity

Multicollinearity means that there is linear relationship between explanatory variables which may cause the regression model biased. If the explanatory variables are perfectly linearly correlated i.e. $\Gamma x_i x_j = 1$, the parameters become indeterminate, (Gujarati, 2008).

Table 4.6 Variance Inflation Factor

Variable	Coefficient VIF
PUBD	0.042522
PUBC	0.036898
PBD	0.043051
PBC	0.005906
BI	0.006327
NS	0.014807
INF	0.001954
RIR	0.004199

The fact that if VIF is significantly greater than 5percent (i.e., the common rule of thumb value stated), would suggest that exhibits multicollinearity. In the above table results, it can be seen that there is no multicollinearity between the explanatory variables (PUBD, PUBC, PBD, PBC, BI, NS,RIR and INF). Hence no VIF scored above 5percent.

4.4 Co-integration Tests

The stationary test demonstrated that all variables are not stationary at level and it implies that any estimation using this level data to wrong conclusion and policy implication. However, the Granger representation theorem states that it is possible for non-stationary produce a stationary relationship if they are co-integrated. This would imply that there is a meaningful long-run relationship between the variables. Thus, the presence of and the number of such co-integrating relationships are checked using the two-step estimation procedure for dynamic modeling suggested by Engle and Granger (1987).

By deploying Engel and Granger two-step residual-based test, we can go for a co-integration test. Granger (1981) first introduced the concept of co-integration. But later it was further extended by Engle and Granger (1987). This is based on the concept that if the residual of the model found stationary which means the relevant time series variables are co-integrated; it is signal that there is a long run association and we could then proceed to the second step, where an Error Correction Model, including those lagged residuals as an error-correction term, would be postulated in order to consider the short-run dynamics.

After OLS estimation of the model GLFCF = βt1 + βt2PUBD + βt3PBD + βt4LPUBC + βt5PBC+ βt6BI + βt7NS+ βt8RIR+ βt9INFR+ Є When the study test for the presence of unit root on the residuals obtained that the residuals are stationary it means that the variables in equation are co-integrated or they have a long-run relationship. Hence this will lead to Error correction model.

As table 7 indicates that residuals test with value t statistic 4.933 is the absolute term of critical value 3.000.This implies that when residuals trace statistics is more than 5% critical value; we cannot reject the null hypothesis. This means that there is co-integration between explanatory and dependent variables used in the study. Also, when we see residuals test without trend absolute value t statistic 4.082 is greater than the absolute term of critical value 3.600. According to the result table 7, that is co-integrated between variables.

Table 4.7 Root Test on Residuals

Null Hypothesis: residuals has a unit root		
Augmented Dickey-Fuller Test Equation		
	with trend	without trend
Residuals	-4.933	-4.802
Critical value at 5%	-3.000	-3.600

4.5 Model Stability Test

As Pesaran and Shin (1997)stated that structural stability of the long-run and short-run relationships for the entire period is better examined by the cumulative sum (CUMSUM) and the cumulative sum of squares (CUMSUMSQ) of the recursive residual test. CUSUM test is established on the cumulative sum of the recursive residuals. It plots the cumulative sum tests with 5% critical lines. If the cumulative sum goes outside the area between the two critical lines, then the CUSUM test finds parameter instability in the mode.
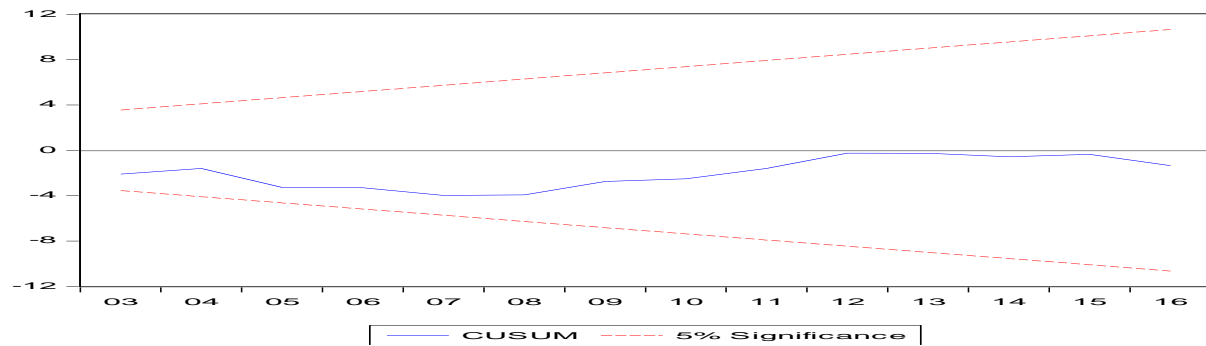

Figure 4.7 Cumulative Sum of Recursive Residuals

On the other hand, The CUSUM of squares test gives a plot at the pair of 5% critical lines. If this test shows there is movement outside the 5% critical lines, then it reveals parameter instability. In this paper, both CUSUM and CUSUM square tests lie inside the two red lines.
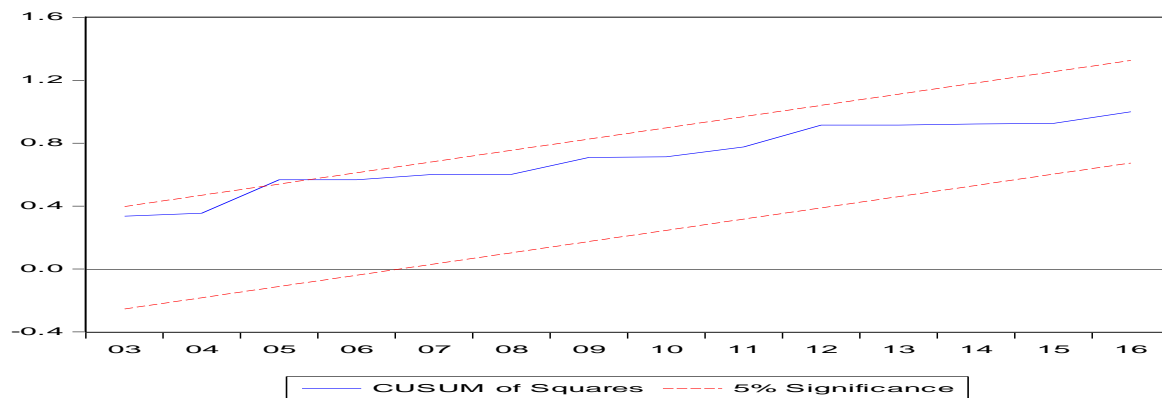

Figure 4.8 cumulative sum of square recursive residuals

The two plots disclose that the plots of CUMSUM and CUMSUMSQ stay within the lines, and, therefore, this confirms the equation is correctly specified and the model is stable. Furthermore, the results reveal that there is no structural instability in the model during the sample period.

46

4.6 Long Run Model

In the regression the long run relationship between dependent variable (Gross Capital formation) and independent variables (Public Bank Deposit, Private Bank Deposit, Public Bank Credit, Private Bank Credit, Bank Investment and control variables National Savings, Real Interest Rate, and inflation rate) is presented below.

Table 8 reveals that three variables PUBD, PUBC, PBD, and NS are statistically significant while, PBC, BI, INF and RIR are insignificant. The intercept is statistically significant at 5 percent. The adjusted R-squared values measures the proportion of the variation in the dependent variable accounted for by the explanatory variables and interpreted as the dependant variable Gross Capital formation was explained by 86% of the independent variables.

Table 4.8 Long Run OLS estimation result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.410855	3.015587	1.131075	0.2747
PUBD	1.511360	0.415357	3.638699	0.0022
PUBC	1.988928	0.613921	3.239717	0.0051
PBD	0.895663	0.207487	4.316715	0.0005
PBC	0.030304	0.368655	0.082202	0.9355
BI	0.015367	0.079543	0.193192	0.8492
NS	0.449881	0.121685	3.697102	0.0020
RIR	-0.257300	0.337933	-0.761394	0.4575
INF	-0.002065	0.044209	-0.046719	0.9633
R-squared	0.908164			
Adjusted R-squared	0.862246			
Log likelihood	-51.63038			
F-statistic	19.77793			
Prob(F-statistic)	0.000001			

Test of Hypotheses

The hypotheses are generally stated in the null and alternate form and presented by the below table following the detail analysis.

Table 4. 9 Hypothesis test result

Null Hypothesis	Result
Ho_1: Public bank deposit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia.	From table 4.3 the null hypothesis is rejected at 5% percent level of significance (95% level of confidence)
$H0_2$: Private bank deposit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia.	From table 4.3 the null hypothesis is rejected at 5% percent level of significance (95% level of confidence)
$H0_3$: Public bank Credit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia	From table 4.3 the null hypothesis is rejected at 5% percent level of significance (95% level of confidence)
$H0_4$: private bank Credit does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia	From table 4.3 the null hypothesis is not rejected even at 10% percent level of significance
$H0_5$: Bank investment does not play any significant positive role on Gross Fixed Capital Formation in Ethiopia	From table 4.3 the null hypothesis is not rejected even at 10% percent level of significance.

The coefficient for public bank deposit money mobilized by public banks as a share of GDP is as expected positive sign and statistically significant which revealed that PUBD growth (which is the approximate measure of financial development) is an important determinant for Capital Formation. The result suggests that in Ethiopia, in the long run, an increase in Public bank deposit by 1percent increases capital formation by 1.5percent. Thus, the empirical results of this study clearly demonstrate that, within the Ethiopia context, there is a significant and positive relationship between capital formation and Public Bank deposit is accepted. This finding is consistent with papers done in Ethiopia previously by Muluneh (2014) in general and in African countries particularly by Gbenga et.al (2013), Okaro(2015). They revealed that bank deposit has a significant positive effect on capital formation.

Public Bank credit is used in the process of capital formation, by utilizing the savings and provide to an individual or organization to enhance capital formation through the distribution of funds. As expected in the theoretically the coefficient of Public Bank credit has positive and

significant relation with capital formation in long run. Interpret as public bank credit increases by 1 percent; also increase capital formation by 1.9percent, so the positive impact of public bank credit which improves net investment in Ethiopia may show that effective using of saving by extending of credit for the capital formation of the country which improves the productive capacity of the economy.

This finding is consistent with the results of IMF(2014) report which states that in Ethiopia a state-owned banking system, where a large fraction of deposits are lent to the government long-term investment projects also study done by Berehane (2016) Financial Determinant of Capital formation, Muluneh (2014), Gbenga et.al (2013), and Okaro(2015).

Private Bank deposit has a positive and statistically significant relationship with Capital formation at 5% significance level. Per the regression results, the coefficient of this variable is 0. 8956 meaning that one percent raises in private bank deposit causes the capital formation to increase by 0.89 percent this signifies Increase in deposit accounts indicates that private banks are able to collect deposits from a wider customer base hence increasing the amounts available for lending. With increased lending levels in the country, more funds will be invested in different sectors hence positively impacting on the capital formation and economic growth registered.

On the other hand, it implies the role of private commercial banks has become increasingly important. And the demand deposits mobilized by the private banks increased; hence there is a significant shift from the dominantly state-owned banks controlling the finance sector towards privately owned commercial banks.

Private bank credit had a positive but insignificant effect on capital formation. The insignificance effect of a variable may be due to (NBE) policy. To guide any economy to the intended direction the government has two policy alternatives at hand, the first one is a fiscal policy the other one is monetary policy. Fiscal policy mainly deals with government expenditure and revenue. While monetary policy is about setting interest rates, determining the money supply and generally supervising the banks and other financial institutions operating in the economy.

In the Ethiopian economy, the National Bank of Ethiopia (NBE) is at the top of the banking system, which serves as the central bank and monitors all financial institutions including private and government-owned commercial banks, insurance companies and microcredit institutions.

Among those Ethiopian private banks, were forced to limit their lending in order to control inflation for the past few years, but finally, are set free with a condition of allocating 27 percent of their lending to the government with an interest rate of just 3 percent. The National Bank of Ethiopia has issued a Directive 'Establishment and operation of National Bank of Ethiopia Bills Market Directive No.MFA / NBE BILLS / 001 / 2011 ' which requires all banks in Ethiopia to purchase NBE Bills to the amount of 27% of the disbursement towards loans and advances. The Bills have a maturity period of 5 (five) years and bear interest at the rate of 3% per annum, payable on an annual basis (Simeneh, 2013).

Hence, in the long run, private banks may choose to fully recover the added burden of the new directive by adjusting their lending rates upwards; in this case, borrowers will be hurt most by the directive as they face higher financing costs. On the other hand, if both the private and public sectors compete for a limited amount of resources in the economy, the costs of financing private investment increase, while the availability of credit to the private sector declines. This means that private banks' credits do not contribute significantly to capital formation.

Hence in all the above reasons even if private banks can collect a significant amount of deposit from the public has not been disbursed as loan and advanced.

Bank investment has a positive and insignificant relation with capital formation in long run. Thus, the null hypothesis Bank investment does not play any significant positive role in Gross Fixed Capital Formation in Ethiopia is not rejected. This finding is consistent with the results of (Muluneh, 2014) and (Okaro, 2015).

National saving which taken as a control variable has a significant and positive effect on capital formation. The result shows that 1 percent increase in national saving rate increases capital formation rate by 0.45percent in the long run. This result suggests that to achieve maximum benefit and to promote capital formation, expansion of modernization and accessible the saving institution, rise of income level of the society, and availability of appropriate saving products enhance the national saving rate to be increased from year to year and then increases the capital formation of the country through making loan able funds in banking industry. Country's national savings is the sum of private and public (Government) savings. This result is in line with other studies, of in Ethiopia previously by Muluneh (2014) that national saving has a significant

positive effect on capital formation and by other developing countries (Alex, 2012), (Gbenga et.al, 2013), and (Okaro, 2015).

The rest variables such as inflation rate and real interest rate are insignificant. An inflation rate, which is used to show the impact of macroeconomic uncertainty on private saving, has a negative and insignificant impact on the capital formation of the nation. In the Ethiopian history, inflation remained at a reasonable low-level rate until 2002/03. But after 2004, the inflation rate increased and reached 36.4 percent in 2009 (NBE, 2013/14), which was caused primarily by food inflation and affect the well-being of the society than harming the macroeconomic performance.

Inflation can lead to uncertainty about the future profitability of investment projects (especially when high inflation is also associated with increased price variability). This leads to more conservative investment strategies that would otherwise be the case, ultimately leading to lower levels of investment and economic growth. The result is consistent with empirical findings of Kanu(2014) and Ugwuegbe, et.al (2013).

The real interest rate has insignificant and negative impact on Ethiopian Capital formation. This result contradicts with neoliberal view which stated investment is positively related to the real rate of interest in contrast. The reason for this is that a rise in interest rates increases the volume of financial savings through financial intermediaries and thereby raises investible funds.

Finally, the long run estimated model presented as follow with figures in the parenthesis indicates calculated t-value.

$$GCF=3.41+1.51PUBD+0.89PBD+1.99PUBC+0.03PBC+0.02BI+0.45NS-0.02RIR-0.02INFR$$

$$(1.13) \quad (3.64) \quad (4.32) \quad (3.24) \quad (0.08) \quad (0.19) \quad (3.69) \quad (-0.76) \quad (-0.046)$$

4.7 Short Run Dynamics

After determining the long run relationship among the variables in the long run model and their long-run coefficients, the next step is to determine the coefficients of the short-run dynamics. Economic variables have short-run behavior that can be captured through dynamic modeling. If there is a long-run relationship between the variables, an error correction model can be formulated that portray both the dynamic and long-run interaction between the variables.

The ECM model has a nice behavioral justification in that it implies that the behavior of dependent variable is tied to independent variable in the long run and that short-run changes independent variable respond to deviations from that long-run equilibrium.

Table 4.10 Error Correction Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.457576	0.528036	0.866562	0.4008
D(PUBD)	0.379241	0.571217	0.663917	0.5175
D(PUBC)	-0.251621	0.87872	-0.286349	0.7788
D(PBD)	0.519848	0.239133	2.17389	0.0434
D(PBC)	-0.746356	0.607975	-1.22761	0.2398
D(BI)	0.021371	0.0549	0.389263	0.7029
D(NS)	0.216006	0.110874	2.948208	0.0117
D(RIR)	0.365813	0.406463	0.899991	0.3833
D(INF)	-0.035367	0.030899	-1.144606	0.2716
ECM(-1)	-0.577925	0.259911	-2.223549	0.0432
R-squared	0.556964			
Adjusted R-squared	0.272155			
S.E. of regression	2.329452			
Sum squared resid	75.96883			
Log likelihood	-47.88176			
F-statistic	1.955573			
Prob(F-statistic)	0.125773			

Table 4.13 shows the short run relationship outcome of the error-correction model, from which the short-run impact of public bank deposit, public bank credit, private bank deposit, private bank credit, bank investment, National saving, real interest rate and inflation on capital formation can be analyzed.

The results of the ECM [-0.58] or 58%, which represents the speed of adjustment to restore equilibrium in the dynamic model following a disturbance, appear with a negative sign and is statistically significant at 5% level of significance level, suggests speed of adjustment back to the long-run equilibrium.

The short-run impact of public bank deposit on Gross capital formation in Ethiopia is inconclusive (positive but insignificant). The findings of the study suggested that in the short-run public Bank deposit is insignificant in determining capital formation in Ethiopia. This result is quite similar IMF (2014) report which told us "The current level of domestic savings is insufficient to finance the high investment (particularly public), thus opening up a large resource gap. There is a risk that the investment levels envisaged under the GTP II the plan would not materialize and may outstrip the absorptive capacity of the economy". This result also agrees, with (Njimanted, 2016), He argued that the insignificant effects of the level of Public Bank deposit in the short run is the inability of the banking sector to stimulate domestic investment in Cameroon can be attributed to the fact that the banking sector has remained underdeveloped, with many banks facing the problem of excess liquidity in the phase of liberalized but highly regulated interest rates, high-interest rate spreads and the increased costs of transaction.

Similarly, the above short-run dynamic results also suggested that private Bank deposit have inconclusive (positive and significant) effect on Gross capital formation of Ethiopia.

The short-run coefficient of Public Bank credit indicates a negative and insignificant effect on Gross capital formation, while it has shown significant positive impact in the long run in Ethiopia. The negative sign is indicative of a "crowding out" effect on private capital formation in the short run. Public investment can crowd out private investment through different channels. First, government investment can crowd out private investment through increased borrowing. For example, if public-sector investments are financed by borrowing, this leads to an increase in the market interest rate and thus raises the cost of capital for the private sector, crowding out the private sector hence this could lead to credit allocated by public banks couldn't finance the gross capital formation of the country.

On the other hand, Insignificancy of the result can be justified as; since state-owned banks including Commercial Bank of Ethiopia, the country's biggest lender, are exempt as they routinely finance long-term projects. A policy directive has been issued to ensure banks provide funds for long-term infrastructure projects. Hence capital formation (both private and public) is not realized in the short period of time.

Consistent with the long-run finding Bank investment and inflation have an insignificant negative impact so that it doesn't explain capital formation in the short run.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The study empirically investigates the role of Bank deposit and credit financing on capital formation in Ethiopia by using time series data from 1991/92 to 2015/16. To do this the researcher employs OLS regression analysis because literature suggests that OLS analysis is more convenient for time series analysis. The study has used public bank deposit, private bank deposit, public Bank credit, private bank credit, bank investment, as explanatory variable while National saving, inflation and real interest rate is taken as control variables.

Before testing for time series property, the model stability was done by testing the diagonal testing techniques. The result revealed that no evidence of serial correlation, no Multi co linearity, the residual is normally distributed and no evidence of hetroscedasticity problem. In addition to this the stationary properties of the variables are checked by using Augmented Dickey Fuller (ADF) test. Accordingly, all variables are non-stationary at the level but all variables are become stationary after first differencing.

The empirical analysis in the model suggests that existence of long run dynamic relationship among variables considered in the models (the co-integration test done on the residuals).

Empirical results of the study provide evidence that there is a significant positive long run relationship between public bank deposits and Gross capital formation in Ethiopia. However, the impact of public bank deposit found insignificant in determining gross capital formation in the short run. This is quite similar IMF, (2014) report which told us "The current level of domestic savings is insufficient to finance the high investment (particularly public), thus opening up a large resource gap.

Public bank credit affects Gross capital formation differently both in the short run and in the long run. In the long run the impact of public bank credit is found significant and positive but in the short run it has negative and insignificant effect. Such short run result may be due to the fact that public projects has long gestation period and the productive outcome of public bank credit is only visible in the long run.

Bank investment also found to have insignificant effects in the short run and long run result of the study indicates that banks were not directly occupied in investments sector of the economy. Hence, as per the national bank directives banks are allowed to invest a significant amount in security investment such as Treasury bond and great renaissance dam bond rather than in other portfolio investments.

National saving had significant positive effect both in the short run and long run on capital formation in Ethiopia. The positive effect of national saving on capital formation implies since increased national savings will lead to greater availability of investment fund which will lead to greater productivity, and higher growth of capital formation in the economy. This regression finding is supported by descriptive analysis that on averages the national saving over the sample period accounted to be 25.2 which is the highest average during the study period.

The other finding of this study is the insignificant impact of inflation in Capital formation in Ethiopia during the study period. Its sign is negative both in long run and short run; from this one can understand that inflation wasn't significantly harming the Ethiopian Gross capital formation during the study period.

Finally the estimation result from the model indicates that real interest rate has negative and insignificant effect on capital formation in Ethiopia. This result of the study implies that depositors are not sensitive on real interest rate. Thus, accumulation of financial saving in Ethiopia is determined more by the desire to invest than the desire to live on interest income.

Generally, Regression results revealed that among Gross capital formation development indicators public/private commercial banks deposits and loan and advances are most important factors that positively and significantly influence gross capital formation in Ethiopia. Despite the rapid growth of private banks by their Credit contribution for capital formation had negative and insignificant effect this will be with possible reason of Private policy directive of Banks are required to offer 27 percent of their loans to the government and do so at an interest rate of 3 percent As a consequence, credit will be tight and expensive and made private bank credit to capital formation insignificant.

As shown strong beneficial effect of public/private bank deposit, public and national saving rate in the long run is witnessed. In contrast, most of the variables included in the model have limited impact in the short run.

The coefficient of the error term that captures the speed of adjustment towards the long run equilibrium is found with the correct sign and magnitude. The speed of adjustment is -0.577925, which implies that around 58% deviations from long run equilibrium are adjusted every to correct any deviation from the equilibrium.

5.2 Recommendations

The findings of the study provide evidence that Gross capital formation in Ethiopia, like in other developing countries is affected by financial and macroeconomic variables. The empirical evidence however has certain important policy implications, and in view of that recommendations have also been provided, in an attempt to help increase and stimulate capital formation in Ethiopia. In the long run model variables like Public Bank deposit, public bank credit, private bank deposit, Private Bank credit and National saving were positive relation with the Gross capital formation.

The very crucial point is Ethiopia is the fastest economic growth with huge population size however, still Banks don't have sufficient amount of deposite for easy financing those who have an idea and they don't afford on the private sector investment. Encouraging the expansion in private sector investment towards the government capital investment rising in public expenditures on the provision of infrastructure for rural areas will also be helpful for optimum investment.

Recently, Ethiopia implemented various domestic resource mobilization schemes like improving pension fund policies, introducing housing scheme and issuing long term bond for power generation. In addition, financial sectors especially banks have improved their outreach throughout the country to mobilize sufficient funds. However, as observed from the widening saving-investment gap to GDP ratio from merely 0.3% in 1992 to about 6.1% in 2016, the fast and high economic growth during the last decade relies more and more on foreign loans and

grants. Therefore, to make investment sustainable from own resource mobilization, further resource mobilization schemes must be in place.

Based on the findings of the study Private Banks credit has insignificant result on Capital formation hence the researcher recommend that Government should empower those private banks on their credit allocation like by relaxing policies of the imposed credit ceilings on private banks, which reduced the volume of credit. Banks also should ensure that all the credit granted to the private sector is channeled to more productive investments and high yielding ventures. The banks could do this by monitoring closely the use of credits meant for investment.

To enhance the banking sector's ability to mobilize deposits and efficiently allocate savings, all Interest rates should be market determined. Recently NBE has announced its decision to increase the deposit rate from 5 percent to 7percent, this is still below the level that can allow financial institutions to mobilize deposits and extend credit to support the growth of business and the economy at large. This requires higher interest rates above the inflation rate to make saving a profitable endeavor.

In the end, this research helps for other researchers as a source of reference and as a stepping stone for those who want to make further study on the area afterwards, since this research couldn't incorporated all variables both at macro level and Bank specific. Future research work could take consideration the role of Bank's deposit and credit on Private and public investment separately.

REFERENCES

Abreha Gezae (2015). Determinants of banking sector development in Ethiopia, School of Graduate Addis Ababa University, Ethiopia.

Ali Jude,Jatau simon and ashami philip(2016). Deposit Money Banks' Credit and Investment Drive of Developing Economies: Empirical Evidence from Nigeria Asian Journal of Agricultural Extension, Economics & Sociology Vol. 1, Issue 1 /2016.

AbateYesigat (2016).The Saving-Inflation Puzzle: Explaining their Relationship in Ethiopia,IOSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 22, Issue 2.

Admassu Bezabeh (2014). Banking sector reform in Ethiopia,Barowsky School of Business, Dominican University of California.

Aklilu Tessema (2016). The Impact of Financial Development on Economic Growth InEthiopia, School OfGraduate Addis Ababa University,Ethiopia.

Atlaw Alemu (2011). The structure magnitude and trends of capital formation in and for agriculture in Ethiopia.

Agu (2004). Nigerian Banking Structure and Performance: The Banking System's Contribution to Economic Development.

Angus (2006).An Evaluation of World Bank Research, 1998 - 2005

Alex E.O (2012).The Role of Banks in Capital Formation and Economic Growth: The Case of Nigeria, Economy Transdisciplinarily Cognition, Vol. 15, Issue 1 /2012.

Alede (2003).Gross fixed capital formation & economic growth of Pakistan,Journal of Researchin Humanities, Arts and Literature Applied Vol. 1, Issue 2.

Damodar N. Gujarati (2008). Basic Econometrics: Fifth Edition.

Edward F. Buffie (2003). Tight money, real interest rates and inflation in Sub-Saharan Africa,IMF Staff Papers Vol. 50, No. 1.

Gbenga Wilfred andAdeleke Omolade(2013). Savings, Gross Capital Formation and Economic Growth Nexus in Nigeria,IOSR Journal of Economics and Finance (IOSR-JEF),Volume 1, Issue 2.

Henry(2015). Banking Sector Development and Capital Formation in Nigeria: Account and Financial Management Journal.

Imoughele, Lawrence Ehikioya (2014).An Econometric Analysis of the Determinants of Private Domestic Savings in Nigeria, International Journal of Humanities and Social Science Vol.4 No. 5.

International Monetary Fund(2014). World Economic outlook: World Economic and Financial Survey, Washington, DC.

Jeremy Greenwood and Boyan Jovanovic (2009). Financial development, Growth, and the Distribution of Income, the Journal of Political Economy, Vol. 98, No. 5.

Kanu, Success Ikechi & Ozurumba(2013). Capital Formation and Economic Growth in Nigeria, Global Journal of human-social science: Economics Volume 14 Issue 4.

Keatinge (2014). The Case for Financial Sector Liberalization in Ethiopia: The University of Michigan.

Melkamu Dereje (2016). The Relationship between Commercial Banks' Development Economic and Growth in Ethiopia,School ofGraduate Addis Ababa University, Ethiopia.

Muluneh Lemma (2015).The role of banks deposit mobilization and credit financing on capital formation in Ethiopia.

Nzotta, S.M (2004). Money, Banking and Finance: Theory and Practice, Owerri. Hudson Jude Publishers.

Ochejele, J. J. (2004). "The Nigerian Financial Market and the Challenges of the Twenty-First Century.

Okaro (2016). Deposit Money Banks' Credit and Nigerian Economic growth and development, celestine sundayng-journal of social development, vol. 5, and no. 5.

OrjiAnthony(2012). Bank Savings and Bank Credits in Nigeria: Determinants and Impact on Economic Growth Anthony International Journal of Economics and Financial Issues Vol. 2, No. 3, 2012.

Paschal Ojimadu, Chibueze Aniebo and Callistus Ogu(2016). Bank Credit and Capital Formationin Nigeria: Journal of Policy and Development Studies Vol. 10, No. 2, May 2016.

Pierre-Richard (2005).Financial intermediation, monitoring and liquidity.

Rekha (2011). Short-run and long-run relationship between capital formation and economic growth in india: jai narain Vyas University, jodhpur, ijmt, volume 19, number 2.

Ronald McKinnon (1973). Money and Capital in Economic Development, Washington, DC: Brookings Institution.

Nzotta (2004).Theory of Capital Formation: African Journal of Accounting, Economics, Finance and Banking Research Vol. 5. 2004.

Njimanted A (2016). An Econometric Investigation in to Financial Intermediation, Domestic Investment and Economic Growth in Cameron: Journal of Finance and Economics, Vol. 4, No.1.

Samson Ogege and Abass A.Shiro (2013). "Does depositing money in bank impact economic growth?" Evidence from Nigeria African Journal of Business Management Vol. 7(3), 196-205, 21 January, 2013.

Sanjib Bordoloi (2008). Saving and capital formation in India: some exploration, The Journal of income and wealth, Vol. 30, No. 1.

Sunny Ibe O (2016). Impact of Capital Formation on the Economic Development of Nigeria. Fifth International Conference on Global Business, Economics, Finance and Social Sciences.

Shuaib I.M (2015).Capital formation: impact on the economic development of Nigeria: European journal of business, economics and accountancy,vol. 3, no. 3.

Teklu Kassu (2014). Public External Debt, Capital formation and Economic growth in Ethiopia: Journal of Economics and Sustainable Development Vol.5, No.15.

Tom Keatinge (2014). The Role of Public and Private Sector Banking in Ethiopia's Future Economic Growth, Global Center on Cooperative Security.

Ugwuegbe S. (2013). The Impact of Capital Formation on the Growth of Nigerian Economy: Research Journal of Finance and Accounting ISSN 2222-1697 (Paper) ISSN 2222-2847 Vol.4, No.9, 2013.

United Nation Trade and Development report, December 2016.

UNSNA, 2008 United Nations System of National Accounts.

Uremadu (2004).Introduction to finance Benin: Mindex Publishing Company Ltd.

Ugwuegbe S. Uand Uruakpa, P. C. (2013). The Impact of Capital Formation on the Growth of Nigerian Economy: Research Journal of Finance and Accounting, 4(9), 36-40, ISSN 2222-1697.

venkati ponnala (2016).Impact of banks deposit mobilization and credit financing on capital formation: international research journal of marketing and economics vol. 3, issue 6, June 2016.

Yohannes Ghebru (2014). An empirical time series analysis on the determinants of gross national saving in Ethiopia: ARDL approach to co-integration. School of Graduate Addis Ababa University, Ethiopia.