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Special issue on

The Effect of Monetary Policy on Output Growth in Ethiopia
&
A Special Need Assessment Survey of Elders, People with Disability and Vulnerable Group in Ethiopia

Edited by
Etana Ayeru Fekede

Acronyms

AIC	Akaike Information Criterion
ARDL	Auto Regressive Distributive Lag
BLOSA	Benishangul Gumuz Bureau of Labour and Social Affairs
CB	Central Bank
CCC	Community Care Coalition
CSA	Central Statistic Authority
ECM	Error Correction Model
EEA	Ethiopian Economic Association
EEPNA	Ethiopia Elderly and Pensioners National Association
EPDRF	Ethiopian People Democratic Revolution Front
FENAPD	Federation of National Associations for People with Disabilities
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Monetary Fund
IRF	Impulse Response Function
MoFED	Ministry of Finance and Economic Development
MOLSA	Ministry of Labour and Social Affairs
NBE	National Bank of Ethiopia
OLS	Ordinary Least Square
OMO	Open Market Operation
PIP	Policy Ineffectiveness Proposition
REH	Rational Expectation Hypothesis
TLHLM	Tikuret Legumuz Hizb Limat Maheber
UNICF	United Nation International Children Fund
US	United State
VAR	Vector Auto Regressive
WB	World Bank

The Effect of Monetary Policy on Output Growth in Ethiopia (VAR model analysis):

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Abstract

There is a controversy over the effectiveness of monetary policy in achieving its target objectives(maintaining price stability, equilibrium in balance of payment and fostering economic growth) especially in developing countries due to their under developed financial structure. This study analyzes the effect of monetary policy on the output growth in Ethiopia for the period 1974/75 to 2010/11in Ethiopia. With the objective of finding out the effect of monetary policies on economic growth, the study used a restricted vector auto-regressive (VARs) framework, based on the neo-classical growth model, to compute impulse response functions. Empirical analysis has been performed by using Johansen Maximum likelihood method. The main result shows that monetary policy has a significant and negative effect on output growth in the long run as well as in the short run. The finding shows that monetary policy is missing its objective and it is ineffective in bringing sustainable output growth. The Coefficients of equilibrating error terms, ECM suggest that the speed of adjustment (feedback effect towards the long run equilibrium) takes few years for full adjustment when there is a shock in the system. In order to overcome the ineffectiveness of monetary policy, policies that improve financial infrastructure should be drawn including deepening the financial sector liberalization to enhance competition in the banking sector, and financial sector allow transparency and public confidence in the financial system, strengthening supervision of the financial institutions, widening the geographic coverage of monetization, and maintain the autonomy of the banks.

Key words: Monetary policy, output growth and Vector auto-regressive

CHAPTER ONE

1. Introduction

1.1 Background of the Study

Monetary policy as a technique of economic management to bring about Sustainable economic growth and development has been the pursuit of any nations. The monetary policy is conducted with a view to achieving multiple objectives such as maintaining price stability with a low inflation rate and fostering higher economic growth. It is seen as a fundamental government policy with respect to the quantity of money, interest and exchange rates, which are believed to have a predominant role on aggregate demand, inflation and output (Rahman, 2005). Since the expositions of the

role of monetary policy in influencing macroeconomic objectives like economic growth, price stability, equilibrium in balance of payments and host of other objectives, monetary authorities are burdened the responsibility of using monetary policy to grow their economies.

There is wide agreement about major goal of economic policy. However there is least agreement about the role that various policy instruments can and should play in achieving the several goals (Friedman, 1968). The effectiveness of monetary policy is a long standing issue in literature of the monetary economics and central banks. In the Keynes' general theory in the writing of the "Keynesian economist" in the 1940 through 1960 monetary policy was ineffective in the United State and other industrialized countries.

A decade later, perspectives on the effectiveness of monetary policy had changed and in some circumstance monetary policy was viewed as equally important as fiscal policy for affecting both inflation and output fluctuation. In the 1960s the rise of "monetarism" subsequently to the work of Friedman and Schwartz (1963) and Anderson and Jordan (1968) gives rise to the importance of monetary policy in controlling inflation and bringing significant effects on short run fluctuation in real output.

The formal articulation of how money affects economic aggregates dates back to the time of Adams Smith and later championed by the monetary economists. Growing recognition of the importance of money and other monetary aggregates in the determination of spending, output, and prices has been fostered by the apparent failure of stabilization policy to curb the inflation of the last half of the l960's. Starting from the late 1960s, the failure of 1968-surtax policy in the United States of America introduced a new ground for monetarist attack claiming that fiscal policy has a very little effect on aggregate demand and monetary policy is more important than most people had thought to be (Rahman, 2005). This owes much to the "rise" of the doctrine of monetarism. Monetary targeting used to be a prominent monetary framework after the collapse of the Bretton Woods system of the fixed exchange rate regime in 1973 (Waranya A. 2006).

Anderson and Jordan (1968) introduce a monetarist model of economic stabilization which is known as St. Louis model. The introduction of this model gives upper hand for monetary policy over fiscal policy in developed countries in stimulating growth.

In developing countries, in the context of development, monetary policy has an active role and is considered quite relevant. However, since most developing countries are characterized by fragmentation of financial markets in to formal and informal, poor records in managing monetary policy, lack of independence in central banks and generally under developed financial market, monetary policy is not conducted well.

This all factors leads to the failure of monetary policy in achieving the desired objectives in less developed countries and in turn resulted in inflationary pressure (Mishra and Montiel, 2012).

Neaime (2008) shows that monetary policy has no significance effect on output in Middle East and North Africa. Cheng's (2006) and Montiel (2012), finds that a statistically significant effect of monetary policy innovations on the price level, but they does not find a similar effect on output in sub Saharan Africans. Philip (2003) was unable to identify statistically significant effects of monetary policy shocks in Ghana over the period 1969-2002. In East African countries in spite of good macro performance over the past decade a rise in money supply leads to inflation. This galloping inflation in turn put a constraint on economic growth and exacerbates poverty level in this area (Africa Development Bank 2011).

However, recent attempts at liberalizing and reforming financial markets are gradually providing the latitude required to implement monetary policy frameworks by the relevant central banks. With the reform the responsibility for stabilization policy in low-income countries has increasingly fallen on their newly-independent central bank (Mishra and Montiel, 2012).

Ethiopia experienced different political and economic system in the past few decades. During this period the country is using different policies including monetary policy in order to bring sustainable economic development. However, the economy remains undeveloped. National bank of Ethiopia was established in 1963 with a broad administrative autonomy and juridical personality. Following the adoption of command economic system in 1974, there were a direct monetary control in which the whole policy were regulated by central regime and planning, and the existed financial institutions are nationalized. Also there were a fixed exchange and discriminatory and discouraging interest rate. Economic sectors lost their own autonomy and the development of financial markets and institutions was curtailed. These policy actions together with recurrent drought and intensified civil war were held responsible for the sluggish economic performance and macroeconomic instability, increasing BOP deficits and inflationary pressure (MoFED 1999). Between 1974/75 and 1989/90, growth decelerated from 4 to 2.3 percent (-0.4 percent in per capita terms). Growth was also extremely irregular given its dependence on the agricultural sector, which is vulnerable to the vagaries of nature (Alemayehu 2007). The Derg Regime was also characterized by intense conflict, which accentuated the dismal growth performance.

Following these economic crises, the EPDRF government came in to power in 1990/91 with the adoption of market-oriented economy up on the adjustment programs of (International Monetary Fund) IMF and the World Bank structural adjustments. Policy measures were taken to improve the external imbalance, liberalize trade and

financial sectors, to remove fiscal and real sectors constraints. As an important of stabilization, monetary policies of the reform period has been aimed at maintaining the growth in nominal GDP so that inflation could be contained and external balance maintained at a sustainable level. Government has progressively introduced indirect monetary policy instruments including adjusting interest rate, open market operations for government securities, setting the minimum deposit and maximum lending rate, removing discriminatory interest rate among sectors.

Following the policy reform macroeconomic variables show an improvement. Economic growth during this period was quite impressive. Real total and per-capita GDP grew at average rates of 3.7 and 0.7 percent per annum, respectively, figures that rise to 5.6 and 2.6 percent, respectively, if one excludes the abnormal years 1990-92. The revival of growth appears to be the combined result of the reforms and favorable weather. The growth rate of real GDP was raised to 8.7 on average between 2003/04 to 2009/10.

1.2. Statement of the Problem

Unlike developed countries, the impact of monetary policy on output growth is the most debatable issue in developing countries. Many developing countries in the 20th century were characterized by weak public institutions, including high level of corruption, lack of both physical and human capital, high level of illiteracy and unemployment rate, paired with lack of infrastructure, limited ability in regulating the money supply to influence output and price (Ludmilla Buteal 2011).

The link between monetary policy instruments and aggregate demand, the monetary transmission mechanism, significantly weaker in low-income countries than it is in advanced and emerging economies due to their weak financial structure. Weak and unreliable monetary transmission would suggest restraint in the use of monetary policy, implying that placing primary responsibility for domestic macroeconomic stabilization on central banks may be misguided (Mishra and Montiel, 2012).

Financial market in developing countries tend to be fragmented or segmented into formal (organized) and informal (unorganized). For instance in Ethiopia, parallel to formal financial markets such as banks and other formal financial intermediaries there are also many informal financial institutions such as Iqub, Idir and rural money lenders (usurers). Hence, in many developing countries a large proportion of the money supply is held in the form of currency outside the bank and hence it is beyond the control of the monetary authority. Instead of open market operations, less developed countries tend to practice what is sometimes referred to as closed market operation due to under development of financial markets. As a result, banks fail to serve as effective credit market in less developed countries (Alemayehu 2007). Using closed market operation, developing countries tend to create more money than developed countries. This is the main cause of inflation in developing countries. Thus,

having these all constraints the effectiveness of monetary policy is a questionable issue in most developing countries.

The efficiency of monetary policy in developing countries has been questioned, especially when the structure of the financial system constrains the effectiveness of instruments as well as central bank credibility. In many developing countries, the political pressure put on the important institutions constrains the effectiveness of economic policy. In the case of a central bank, its independence can lead to a more effective and consistent policy. In general, sub-Saharan Africa countries are less integrated with international financial markets, less intervene more actively in foreign exchange markets, have less developed domestic bond and stock markets, have smaller formal domestic financial sectors, and have less competitive banking systems. Thus, monetary policy in this area misses its objective most of the time (Mishra and Montiel 2012).

The Ethiopian economy has been characterized by erratic nature of output growth as the economy is highly dependent on vagaries of nature and external shocks, and as well as due to under development of financial system. Before 2002/03 as output grow price falls. However, this negative co-movement in output and price appeared to have reversed in the post 2002/03 as money supply starts to rise in large amount. Before 2002-2003 monetary policy was biased towards supporting growth because inflation was at low level but with the rising inflation from 2002-2003 monetary actions are towards the containment of inflation (Alemayehu 2008). Growth in Ethiopia is largely determined by political economic factors like the quality of public policies, risk related to war and property right (Alemayehu 2007).

The shifting of policies from one regime to the other may have different implication on the overall economic performance. This situation makes to suspect the credibility of the fast economic growth and effectiveness of monetary policy in stimulating output growth. Despite the use of monetary policy, in Ethiopia the economy is characterized by under development of the financial system and higher fluctuation in output and price, questioning the effectiveness of monetary policy.

Thus, the paper is aimed, to assess the impact of monetary policy on output growth in Ethiopia, specifically, if it has facilitate growth or not and examine the effect of other co-operant factors in bringing about the desired sustainable output growth in Ethiopia during the two different economic system of the Derg regime and the current government using time series data of 37 years (1974/75-2010/11). The period was the time in which the country experienced different way of conducting monetary policy and is the time when the output of the country declines and then shows a greater growth. Thus, the study will critically investigate the impact of monetary policy on output growth and will give responds to the following questions.

- ✓ Could monetary policy stimulate output growth in Ethiopia?
- ✓ Does policy variable (monetary policy) have a long run effect on output growth?
- ✓ Could different conventional monetary theories hold in Ethiopia?

1.3 Objective of the Study

The general objective of the study is to investigate the effect of monetary policy on output growth in Ethiopia.

The study specifically aimed at:

- ➢ Examining the long run relationship between policy variables (monetary policy) and output growth
- ➢ Describing the features and frameworks of monetary policy under different economic and political system in Ethiopian.
- ➢ Examining the validity of conventional monetary theories in Ethiopia.
- ➢ Finally to suggest appropriate policy implications based on the finding of the study.

1.4 Hypothesis

Like developed nations in which monetary policy was effective in stimulating output growth, it is expected to have similar effect in Ethiopia. So the hypothesis of the study is: Monetary policy has positive impact on output growth in Ethiopian and thus, stimulates economic growth.

1.5 Scope of the Study

Monetary policy has many objectives such as price stabilization, maintaining output growth as well as maintaining equilibrium in balance of payment. However, the study is limited to examining the impact of monetary policy on output growth in Ethiopia. In doing so the study employed only secondary data collected from different sources over the period of 1974/75-2010/11. The period was a time in which the way of conducting monetary policy was different.

1.6 Significance of the Study

Macroeconomic instability is the main problem for economic growth of any nation. One means of overcoming macroeconomic instability is using public policy, especially the main goals of monetary policy are to promote maximum sustainable level of economic output and foster a stable price level. Therefore, knowing the role of the various policy instruments will help to formulate appropriate economic policies.

Identifying appropriate policy will help the county to bring sustainable economic development. Thus the study might place its own contribution to evaluate the policy objective and it could be a building block for future studies.

1.7 Organization of the Paper

The paper consists of five chapters with different sections and sub-sections. The first chapter presents the introduction for the paper and the second chapter states the theoretical and as well as the empirical literature reviews. The third chapter presents the methodology that employed in the paper. The forth chapter presents the result and interpretation and finally the last chapter presents the conclusions and policy implications of finding.

CHAPTER TWO: 2. LITERATURE REVIEW

Monetary theory provides insight into how to craft optimal monetary policy. It is referred to as either being expansionary or contractionary, where an expansionary policy increases the total supply of money in the economy more rapidly than usual, and contractionary policy expands the money supply more slowly than usual or even shrinks it. Expansionary policy is traditionally used to try to combat unemployment in a recession by lowering interest rates in the hope that easy credit will entice businesses into expanding. Contractionary policy is intended to slow inflation in order to avoid the resulting distortions and deterioration of asset values.

As David Romer (2012) monetary policy implies a shift of the MP (monetary policy) curve. However the effect of monetary policy on output and interest rate depends on the slope of IS and MP curve. Normally, national income will increase after a positive monetary impulse, that is, open-market purchases. If the IS curve is vertical, however, a shift of the MP curve does not affect national income; there will only be an effect on the rate of interest. With a horizontal MP curve resulting from a liquidity trap, neither national income nor the rate of interest will change. With a positively sloping MP curve and a negatively sloping IS curve national income first increases after a positive monetary impulse. In the special case of perfect capital mobility monetary policy is without any effect on the rate of interest and national income. Any tendency of the rate of interest to fall after an increase in the money supply immediately calls capital outflows into being which make the money supply return to its original volume (Hans, 2004).

2.1 Theoretical Literature

Theoretically, different schools of thought have different views about the relative effectiveness of policy alternatives and the transmission mechanism in which these policy alternatives would bring real effect on the behavior of the economy. The major differences in these traditional schools of thought are found in the nature of the

demand for money, the nature of the investment relationship, the monetary transmission mechanism, and assumptions about the velocity of money. Classical economics and supply-side approaches lead to the conclusion that Aggregate Demand matters little, if at all, in the long run. Keynesians and monetarists alike, however, focus on Aggregate Demand. Monetarists and contemporary Keynesians clearly have different views on some things, but this should not cloud their areas of agreement. Their differences lie in different views about (a) how important monetary policy is relative to fiscal policy, not that one alone matters to the exclusion of the other, and (b) how quickly and effectively government policies can adjust to reverse momentum towards an excessively inflationary expansion or into a recession. The monetary theory of classical, Keynesians and Monetarists are outlined as follow.

2.1.1 Classical Monetary Theory

Quantity theories of money which were first formalized about a century ago by economists at Cambridge University and by Irving Fisher of Yale University identify the money supply as the primary determinant of nominal spending and, ultimately, the price level. Classical monetary theory is based on the quantity theory of money, plus the assumption that output is always constant at its full employment level. They relate money supply to GDP by computing the income velocity of money (i.e. how many times on average money changes hands annually to purchase of final output) (Keith B. and Peter H., 2003).

They develop equation of exchange which is computed as:

$$M\,V = PQ$$

This equation is interpreted as the quantity of money times its velocity is equal to the price level times real output, which equals GDP. A rough corollary is that the percentage change in the money supply plus the percentage change in velocity equals the percentage change in the price level plus the percentage change in real output:

$$\Delta M/M + \Delta V/V = \Delta p/p + \Delta Q/Q$$

Classicalist assumes that income velocity of money is constant and output is fixed at full employment level. And thus, they conclude that in equilibrium the price level is exactly proportional to the money supply.

$$\frac{\Delta M}{M} = \frac{\Delta P}{p}$$

Thus, any changes in the money supply will be reflected in proportional changes in the price level. This is the major result of the classical quantity theory of money:

$$MV = P$$

In the case of a non-growing economy, classical theory would prescribe a stable money supply level in order to avoid unnecessary changes in the price level. In a growing economy, classical theory says that the money supply should grow at the same rate as real GDP in order to keep prices stable. In general, the quantity theory of money states that the central bank, which controls the money supply, has ultimate control over the rate of inflation. If the central bank keeps the money supply stable, the price level will be stable. If the central bank increases the money supply rapidly, the price level will rise rapidly.

Even though classical theorists vehemently opposed large expansions of the money supply because of fear that inflation temporarily distorts behavior, it is probably fair to say that classical monetary theory leads to the conclusion that, in the long run, "money does not matter." It does not affect production, consumption, investment, or any other "real" economic behavior (Bennett T.1989).

2.1.2 Keynesians Monetary Theory

Early classical economists believed that money balances are held only for transactions purposes and that the transactions anyone engages in are roughly proportional to that individual's nominal income. "Why," they asked, "would people want to hold money unless they intend to spend it? Virtually any other asset yields a positive rate of return and money holdings do not. No one holds more money than they need for transactions. They hold income-earning assets instead of money whenever possible." Keynes responded by adding the precautionary and asset (speculative) motives to the transactions motive for holding money (Mishkin 1997).

One major difference between the classical model and Keynes' model is that classical economists view the world as a reasonably certain place, while Keynesian reasoning emphasizes uncertainty and describes how our expectations about uncertain futures might affect the economy. Rising uncertainty is a major reason for growth of the asset demand for money. Due to the existence of this uncertainty the people would probably start saving more. As your saving amount, asset in the form of money balance growth. This leads to a fall in velocity. Therefore, the velocity of money falls as they convert money from transaction balance to precautionary or asset balance when people expect hard times (David A. 2005).

Keynes and his followers assumed that price adjustments are sticky (slow), especially on the down side, and that people's expectations are volatile. This implies that the velocity of money may vary considerably over time and that the real economy may adjust only slowly, if at all, to these variations.

Classical economists viewed the interest rate as an incentive for saving: people are rewarded for postponing consumption. Keynes's rebuttal was that interest is a reward

for sacrificing liquidity. According to Keynes, how much you save is determined by your income and will be affected very little by interest rates. However, interest rates are important in deciding the form saving takes. Peoples will hold money unless offered some incentive to hold a less-liquid asset. Interest is such an inducement. Higher interest rates will induce people to relinquish money and hold more of their wealth in the form of illiquid assets (Carl E. Walsh, 2003).

Keynes believed that very high interest rates cause people to hold little, if any, money in asset balances; the demand for money consists almost exclusively of transactions and precautionary balances. But low interest rates result in large asset balances of money. According to Keynes at a very low interest rate, the demand for money becomes flat. This part of the demand curve for money is called the liquidity trap. A liquidity trap occurs if people will absorb any extra money into idle balances because they are extremely pessimistic or risk averse, view transaction costs as prohibitive, or expect the prices of nonmonetary assets to fall in the near future.

It implies that if the money supply grew, any extra money that peoples received would not be spent, but hoarded, that is, absorbed into idle cash balances. Monetary growth would increase Aggregate Spending very little, if at all. Expectations about economic conditions might become so pessimistic that people would hoard every cent they could "for a rainy day," an instance of the liquidity trap. Alternatively, historically low interest rates might persuade nearly everyone that interest rates will soon rise. People would not want to hold bonds because rising interest rates would reduce bond prices and they would suffer a capital loss; so they would hold money while waiting for interest rates to rise and bond prices to fall.

Most Keynesians agree that monetary restraint dampens inflationary pressures but disagree with the view that monetary expansion is powerful in curing a depression. During a depression, pessimism reigns and interest rates tend to plummet. Consequently, Keynesians suggest that an economy in recession will not recover quickly in response to expansionary monetary policies, because any extra money people receive is seldom spent but is hoarded. Thus early Keynesians recommended massive government spending and tax cuts to cure recessions quickly. They emphasized fiscal policy because of a widespread (though mistaken) belief that central banks throughout the world attempted to push their respective nations out of the Great Depression with expansionary monetary policies (Murray N. 2000).

2.1.3 The Monetarists

Monetarists identified certain variables that influence the amounts of money demanded. Milton Friedman has arrived at the most widely accepted formulation of the new quantity theory of money. Friedman distinguishes the nominal money people hold from their "real" money holdings. Real money is the purchasing power of the

money a person holds. It can be computed by dividing the face values of money assets by the price level (M/P). As the price level rises, the face amount of money needed to buy a particular bundle of goods rises proportionally.

According to Friedman, the variables (besides the price level) that will be positively related to the quantity of money demanded are people's total real wealth (including the value of their labor), the interest rate, if any, paid on money holdings, and the illiquidity of nonmonetary assets. He also identifies some variables as negatively related to the real (purchasing power) amounts of money people will hold: the interest rate on bonds, the rate of return on physical capital, and the expected rate of inflation (Milton Friedman, 1968).

Monetarists are willing to accept the idea that the demand for money is influenced by variables other than income, but they view these relationships as very stable. Moreover, they believe that most variables that influence the demand for money are relatively constant because they are the outcomes of an inherently stable market system. Monetarists believe that the bulk of any instability in a market economy arises because of erratic government policy.

While Keynes had argued that insufficient investment and aggregate demand caused the Great Depression, Friedman and Schwartz argued that it was caused by a drastic contraction in the money supply. Friedman had earlier propounded the quantity theory of money, and has become known for his saying that "Inflation is always and everywhere a monetary phenomenon." But unlike the pure classical theorists, he thought that bad monetary policy could have, at least temporarily, bad effects on the real economy. During the early years of the Great Depression, he and Schwartz pointed out; both the money supply and the level of nominal GDP fell sharply. They argued that the contraction in the money supply caused the reductions in both the price level and real GDP – an assertion that remains controversial. Because of his belief in the potential for bad monetary policy to cause harm, Friedman has been one of the most vocal proponents of the idea that central banks should simply follow a money supply rule (Milton Friedman, 1968).

According to monetarist, monetary policy cannot peg the real magnitudes of macro variables at predetermined levels. But it can and does have important effects on these real magnitudes. Monetary policy can prevent money itself from being a major source of economic disturbance, and also it can contribute to offsetting major disturbances in the economic system arising from other sources.

2.1.4 The New Classical

This class of economists applied the rational expectations hypothesis (REH) to a model of continuous market clearing. The REH suggests that market agents make the best

use of all available and relevant information in their forecasts of inflation. Rational/forward looking expectations are informed predictions of future events and are essentially the same as the predictions of the relevant economic model (assumed the correct model for the economy). It follows that expected inflation (π^e) is an unbiased predictor of inflation (π). Mistakes may be made if the available information is incomplete but expectations are correct on average,

i.e., $\pi^e = \pi + v$ where v is white-noise.

Since the growth rate of money supply is relevant information in the monetarist model, to which new classicalist applied the rational expectation hypothesis (REH), agents are assumed to consider government policy in making their forecasts. The rational expectation hypothesis (REH) and the continuous market-clearing assumption together imply that output and employment fluctuate randomly around their natural levels (Bennett T. 1989).

Increases in aggregate demand do not produce systematic reductions in unemployment even in the short-run – no advantage of demand management! The reasoning is as follows. If the central bank seeks to increase the growth rate of money supply in the hope of reducing unemployment, market agents realize this and correctly forecast that inflation rate will rise. Workers then push wages up in line with the correctly forecast inflation and real wages. Unemployment and output all remain unchanged.

Thus, fully anticipated changes in monetary policy are ineffective in influencing the level of output and unemployment even in the short run – the so-called policy irrelevance or policy ineffectiveness proposition (PIP). Money is neutral both in the short run and long run. According to PIP, the only way the authorities can (temporarily) influence output and unemployment through aggregate demand policies is to take market agents by surprise (Keith Bain and Peter Howells 2003).

A major problem with the new classical model is the empirical support of the non-neutrality of money in the short-run. A monetary shock has impact on output and unemployment, and this impact occurs before the shock begins to influence the rate of inflation.

2.1.5 New Keynesians

The new Keynesians are one group which have been attempted to explore the weakness of new-classical mode and produce new explanation for the non-neutrality of money. According to the New Keynesians even if the expectation of economic agents are correct, returns to equilibrium may take a considerable time due to institutional features of the market. Thus even with the existence of long run equilibrium continuous market clearing is unrealistic (David A. 2005).

In presence of long-run overlapping wage contracts, even if workers form expectations rationally and are able to forecast actions of policy makers, they are unable to react to new information. If so, a rise in money supply pushes up aggregate demand and prices; but during the life of wage contracts, money wages cannot rise. As a result, real wages fall and employment and output rise.

In general, despite the difference among classes of economists on whether monetary policy matters for real variables or not, it seems that there is consensus as monetary policy matters for real economic activities at least in the short run, attempts to exploit the trade-off between inflation and unemployment affects expectation of agents, and expectation matters for effectiveness of a policy, and as the long run impacts of monetary policy fall predominantly for the most part on price and the most important focus of monetary policy should be maintain price stability (Guido Z. 2003).

2.1.6 Monetary Policy and Economic Growth

Antoine Martin et.al (2006) uses a monetary growth model based on the neo-classical technology with knowledge externalities, as in Romer (1986); more specifically, the production function is given by

$$Y_t = F(\bar{K}_t, L_t K_t)\ Yt = A\bar{K}t^{\beta} Kt^{\theta} Lt^{1-\theta} \quad \ldots\ldots 2.1$$

where Kt denotes the capital stock of a representative firm, Lt denotes the amount of labor hired, A is the general level of factor productivity and $\bar{K}t$ is the aggregate capital stock in the economy. If $\beta = 1-\theta$, then equation (1) takes the form of the standard endogenous growth (AK) model and the return on capital is always $A\theta$. Profit maximization of firms implies that factor of production are paid their marginal products. Since in equilibrium $\bar{K}t = Kt$ and $Lt = 1$, the rental rate of capital rt and real wage rate wt are given by

$$rt = r(k) = A\theta k^{\beta+\theta+1} \quad \ldots\ldots 2.2$$

$$wt = w(k) = A(1-\theta)k^{\theta+\beta} \quad \ldots\ldots 2.3$$

Where: k is the capital labor ratio, and $k_0 > 0$, is given.

Let $m_t = \frac{M_t}{p_t}$ denote the real money balances at date t where p_t the price level and M_t is the gross money balance; $M_0 > 0$ is given. The central banks (CB) can affect the money supply in the economy through lump-sum injections or withdrawals of money. The CB chooses $z > -1$ the rate of growth of the money supply, in order to maximize the expected utility of agents. If the net money growth rate is positive then the CB uses the additional currency it issues to purchase goods, which it gives to current agents (at the start of a period) in the form of lump-sum transfers. If the net money

growth rate is negative, then the CB collects lump-sum taxes from the current agents, which it uses to retire some of the currency.

Let τ_t denote the tax or transfer. Since$M_{t+1} = (1 + z)M_t$, the budget constraint of the government is given by

$$\tau_t = \frac{M_t - M_{t-1}}{p_t} = \frac{z}{1+z} m_t \qquad 2.4$$

Let s_t represent the bank saving in the form of capital. The bank maximizes its depositors' expected utility subject to the following constraint

$$m_t + s_t \leq w_t + \tau_t \qquad 2.5$$

Let $\gamma_t = {m_t}/{(w_t + \tau_t)}$ represents the reserve to deposit ratio.

Since capital depreciation from one period to the next, the capital next period is equal to saving today.

$$s_t = k_{t+1} \qquad 2.6$$

Combing the banks' budget constraint (equation 5) with equation (10) we can get an expiration for k_{t+1}

$$k_{t+1} = (w(k_t) + \tau_t - m_t = (1 - \gamma_t)(w(k_t) + \tau_t \qquad 2.7$$

We can use equation (4) and the definition of γ_t to obtain expression for τ_t and m_t. These are

$$\tau_t = z\gamma_t w(k_t) \frac{z\gamma_t w(k_t)}{(1+z) - z(\gamma_t)} \qquad 2.8$$

$$m_t = r_t(w_t + \tau_t) = \frac{\gamma_t w_t (1+z)}{(1+z) - r_t z} \qquad 2.9$$

For logarithmic utility, using $\gamma_t = \alpha$ in (7) the expression for k_{t+1} is given by

$$k_{t+1} = \frac{(1-\alpha)(1+z)}{(1+z) - z\alpha} A(1-\theta) {k_t}^{\theta+\beta} \qquad 2.10$$

When $\beta + \theta = 1$ the production takes the AK form implying the possibility of long run growth. Assuming logarithmic utility, from (10) it follows that on balanced growth path

$$\frac{k_{t+1}}{k_t} = \frac{(1-\alpha)(1+z)}{(1+z) - \alpha z} A(1-\theta) \equiv g(z) \qquad 2.11$$

Equation (11) implies the rate of growth of the economy now depends on the money growth rate. Since $\frac{\partial(1+z)}{\partial z(1+z)(1-\alpha)} = \frac{\alpha}{(1+z(1-\alpha)^2} > 0$ it follows that $g'(z) > 0$ and hence the growth rate of the economy rises with an increase in the money growth rate.

2.1.7 The Transmission Mechanisms of Monetary Policy

The transmission mechanism of monetary policy allows monetary policy to affect real economic activity and inflation through various channels. This mechanism likewise describes the associated lags through which monetary policy actions impact the economy. Recent surveys in the literature have identified and focused on several channels of transmission, particularly through market interest rates, the foreign exchange rate, the volume and allocation of credit, portfolio effects induced by asset price changes, and induced changes in agents' expectations. These channels are interdependent and interrelated as the effects of monetary policy actions could flow through various paths and influence the level of aggregate demand and supply in the economy and ultimately output and inflation (Diwa C. 2006)

Monetary transmission mechanism is the process that describes how changes in monetary policy propagate to other part of the economy. The monetary transmission mechanism describes the ways in which monetary policy impacts aggregate demand and prices by influencing the investment and consumption decisions of firms, households, and financial intermediaries. Alternatively, monetary transmission mechanism describes how policy-induced changes in the nominal money stock or the short-term nominal interest rate impact real variables such as aggregate output and employment. The channels of monetary transmission in a specific economy depend on the presence or absence of barriers to international capital movements and its exchange rate regime, as well as on its financial structure. In an advanced economy, monetary transmission is assumed to operate mostly through four mechanisms: the interest rate channel, the asset channel, the credit channel, and the exchange rate channel (Mishra and Peter Montiel 2012).

Distinguishing the relative importance of various channels of monetary transmission is useful for the following reasons. First, understanding which financial aggregates are impacted by policy would improve our understanding of the links between the financial and real sectors of the economy. Second, a better understanding of the transmission mechanism would help policy makers interpret movements in financial aggregates more precisely. Finally, more information about the transmission mechanism might lead to a better choice of targets. Given the uncertainties with regard to the transmission of monetary policy initiatives to aggregate demand and inflation, the study of these intricate links between policy instruments and key economic variables is crucial to ensure that correct policy measures are taken now to affect a specific outcome in the future (Keith B. and Peter H. 2003).

In general, a successful designing and implementation of monetary policy requires an accurate assessment of: the key variables and markets impacted by the policy measures, and how each is affected, how fast the effects of policy changes propagate to other parts of the economy, and how large these effects are. This requires a careful understanding of the mechanism through which monetary policy affects economic activities. However, the relative importance of these transmission mechanisms is the issue of debate between different economic thoughts.

Classical monetary economic view the linkage between the money supply and National Income is not only strong but also direct. According to classical thoughts Money supply growth boosts nominal income. Output is fixed at full employment and velocity is constant, so introducing this extra money into the economy increases Aggregate Demand which pushes the price level up. Thus, in a classical world, monetary policy shifts Aggregate Demand up or down along a vertical Aggregate Supply curve with only price effects, not quantity effects (Keith B. and Peter H.2003).

In contrast to this, Keynesians argue that the change in money supply do not affect the consumers spending directly, but only indirectly through interest rate. According to the traditional Keynesian view buying securities in open market operation (OMP), reduction in Reserve Requirement (RR) and Deposit Ratio (DR) will increase excess reserve leading to expansion of money supply. However, expansion in money supply would leads to a fall in real interest rate which in turn lower the cost of capital, and causing a rise in investment spending, there by leading to an increase in aggregate demand and a rise in output (Carl E. Walsh, 2003).

Even if expansionary monetary policies do reduce interest rates a bit, Keynesians believe that investment is relatively insensitive to the interest rate, and so income is affected little by monetary policies suggesting that monetary policy is weaker than fiscal policy. The Keynesian view of a slack economy is that monetary expansion induces only quantity adjustments, and the price level is unaffected.

Another economic thought were raised in contrast to the Keynesian, the Monetarists. Monetarists, like their classical predecessors, believe that linkages between the money supply and nominal National Income are strong and direct. Monetarists perceive the demand for money as stable, so an expansion in the money supply is viewed as generating surpluses of money in the hands of consumers and investors. These surpluses of money when spent quickly increase Aggregate Demand.

Classical economics stresses Aggregate Supply, viewing Aggregate Demand as adjusting quickly and automatically when supply conditions change (Supply creates its own demand.). Recognizing the importance of Aggregate Demand in the short run most monetarists believe that growth of the money supply can boost spending and drive a slumping economy toward full employment. Much like classical theorists,

monetarist perceive the market system as inherently stable and think that the economy will seldom deviate for long from full employment.

Monetarists consequently predict that, in the long run, growth in the money supply will be translated strictly into higher prices, even if monetary expansion occurs during a recession. Expansionary macroeconomic policies will, however, induce greater output more quickly in the midst of a recession. Monetarists perceive aggregate demand as proportional to the money supply but are extremely leery of short term adjustments to the money supply as a means of correcting for recession. In their view, the long term effect of any monetary growth is a proportional movement of the price level which raises the prospect of inflation (Milton Friedman 1968).

2.1.8 Channels of Transmission

A monetary policy change may take the forms of a change in the short term rate of interest at which the central bank is willing to lend to the banking sector in order to relieve any shortages of liquidity within the monetary system (interest rate control), a change in the monetary base in the expectation that this will alter the money supply, or its rate of growth (monetary base control) or a changes in the regulations that apply to banks in an attempt to influence the rate of growth of their lending (direct controls) (Keith Bain and Peter Howells 2003).

With price stickiness and rational expectations, long-term real interest rates are affected, influencing the demand for a broad range of capital goods. This represents the interest rate channel. Arbitrage between long-term bonds on the one hand, and equities and real assets, on the other, affects stock market values and real estate prices, which in turn affect household wealth and consumer spending, constituting the asset channel.

Arbitrage between assets denominated in domestic and foreign currencies affects the real exchange rate, which alters the composition of both consumption and investment spending between domestic and foreign goods. This constitutes the exchange rate channel. Finally, credit market frictions imply that some borrowers have access to external funds only through bank credit, while others must pay a premium over the risk-free rate that depends on their net worth (the external finance premium). The credit channel captures the dual effects that changes in the supply of banking system reserves exert on aggregate demand through changes in the terms on which bank customers have access to loans (the bank lending channel) as well as through changes in the external finance premium (the balance sheet channel) (Prachi Mishra and Peter Montiel 2012).

The Transmission Mechanism with the Interest Rate as the Policy Instrument

The interest rate performs several functions in an economy. Ludmilla Buteau (2011) interest rate has been known as the most common instrument for achieving monetary policy, for its influence on expectations, investment, consumption and other important macroeconomic variables in the economy, but also for its influence on financial markets. The use of the interest rate in developing countries often seems inadequate. In these economies, the use of the interest rate doesn't seem relevant considering the absence of a secondary market for financial instruments such as bonds and the lack of involvement of most financial institutions. This makes it difficult for commercial banks to follow or react to a signal from the interest rate, which limits the transmission mechanism.

It is widely accepted that consumption and investment are influenced by changes in the real interest rate which is induced by a change in nominal interest rate. N. Gregory Mankiw (2001) Consumption expenditure derives from current income but consumption decisions depend also on expected future income, the level of wealth and on the ability to borrow against existing wealth. Thus, monetary policy is likely to influence household consumption through interest rate channel. An increase in interest rates: makes saving from current income more attractive, increases repayments on existing floating-rate debt and thus lowers disposable income, increases the cost of borrowing, lowers the price of financial assets and hence influences estimates of private sector wealth, and influences estimates of household wealth and lowers the value of the collateral against which households seek to borrow.

If households believe that the interest rate changes will lower aggregate demand, they might also become concerned about the impact on output and employment which will cause households to lower their estimates of expected future income from employment and become more cautious about current expenditure. Any fear of an impending recession might, in addition, cause banks to tighten the conditions they apply to loan applications, making it more difficult for people to obtain credit even if they remain willing to borrow credit. Therefore an increase in interest rates leads to the reduction in consumption expenditure.

However, not all peoples are worse off. For peoples living off income from savings deposit and whose expected future income depends on annuity to be purchased in the near future an increase in interest rate will increase their consumption. When interest rate increase net borrowers are made worse off and net severs better off. Thus, interest rate changes have distributional effect.

On the other hand, an increase in interest rate rise in external borrowing cost, increase the rate at which the expected future rate from investment is discounted,

increase the return from saving, rise the opportunity cost of financing investment, and lower the asset price, reducing the net worth of firms and making it more difficult for them to borrow and hence leading to reduction in investment expenditure (N. Gregory Mankiw 2001)

Also if firms expect that a change in official interest rate will reduce aggregate demand they may respond by restructuring and cutting back employment by great amount. However, not all firms will be affected in the same way or to the same extent. Much depends on the nature of the business, the size of the firm and its sources of finance. An increase in interest rates improves the cash flow of firms with funds deposited with banks or placed in the money markets.

An increase in domestic interest rates should increase the attractiveness of the currency in foreign exchange markets, raising the value of the currency. This damages the international competitiveness of domestic firms since it raises the prices of their goods and import-competing goods face increased competition from foreign products because their prices are now lower in domestic currency terms. In general, the relationship between interest rate change and aggregate demand is complex, inverse and quit power full.

The Transmission mechanism With the Money Supply as a Policy Instrument

A strong school of theoretical monetary economists has always argued that the monetary authorities could and should, control the money supply through monetary base control. An increase in money supply will cause disequilibrium in money market since it cause a temporary excess supply of money. Thus market agents produce a change in the economy that causes the demand for money to increase to the level of the newly increased supply of money to return the equilibrium. This will takes place through a reduction of interest rate or a rise in aggregate demand due to the rise in money supply (Keith Bain and Peter Howells 2003).

With a highly interest inelastic demand for money and interest inelastic consumption and investment expenditure, monetary policy would be a weak instrument of policy. However, if the interest rate changes have relatively little impact on the demand for money, an increase in money supply leads to a rise in aggregate demand which moves the economy to the equilibrium. In this case monetary policy is a power full.

Economic agents distribute their wealth among the various assets to maximize utility and that the system is in equilibrium with all agents' content with their current pattern of asset holdings. Each asset market is also in equilibrium but equilibrium positions are disturbed by any changes in the total stock of wealth, the expected real

rates of return on assets, the perceived degree of risk associated with each asset, or the agents' attitude to risk.

The response of agents to a change in the supply of any asset affects relative asset prices and disturbs the equilibrium positions in other asset markets. Portfolio effects are concerned with the way in which disequilibrium spreads from one asset market to another.

Portfolio Effects of an Increase in the Stock of Money

Portfolio refers to an array of assets and debts of differing characteristics such as yields, risks, maturities, etc. The portfolio balance theory asserts that the composition of one's portfolio depends on the features of assets and wealth-holder's preferences. Changes in size of portfolio, characteristics of assets, market conditions and wealth-holder's preferences cause portfolio re-composition. A change in the yield of one asset, will affect the demand to hold all assets. The demand for any asset (e.g. money) varies directly with its own yield and inversely with yield on other assets.

There are three distinct views as to how portfolios will be re-arranged, with the differences hinging on the range of assets taken into account and on the extent to which various assets are thought to be good substitutes for each other.

A. The Keynesian Approach

The Keynesian approach is usually known as the (traditional) interest rate channel. According to this channel, the economy has three kinds of assets: money, government bond and real assets. Of these assets, only one – the government bond earns interest. The transmission mechanism between increases in the money stock and the level of nominal income is indirect, operating through the rate of interest i.e. the real interest rate not the nominal interest rate that affects the consumer and business decision.

The Keynesian view emphasizes the role of interest rates in responding to monetary policy and affecting economic activity. According to this view expansionary monetary policy reduces the nominal interest rate, which, with sticky prices, implies that real interest rate falls. Lower real interest rate leads to rise in investments, and consumer durable expenditure thereby stimulating aggregate demand (Keith Bain and Peter Howells 2003).

The fact that it is the real interest rate rather than the nominal rate that affects spending provides an important mechanism for how monetary policy can stimulate the economy, even if nominal interest rates hit a floor of zero during a deflationary episode. With nominal interest rates at a floor of zero, an expansion in the money supply can raise the expected price level and hence expected inflation. This will lower the real interest rate even when the nominal interest rate is fixed at zero and stimulate spending through the interest-rate channel.

B. The Tobin Approach

James Tobin developed a theory, referred to as Tobin's q Theory, which explains how monetary policy can affect the economy through its effects on the valuation of equities (stock). Tobin's transmission mechanism suggests different motives for saving than in Keynes. Tobin defines q as the market value of firms divided by the replacement cost of capital.

If q is high, the market price of firms is high relative to the replacement cost of capital, and new plant and equipment capital is cheap relative to the market value of firms. Companies can then issue stock and get a high price for it relative to the cost of the facilities and equipment they are buying. Investment spending will rise, because firms can buy a lot of new investment goods with only a small issue of stock.

Conversely, when q is low, firms will not purchase new investment goods because the market value of firms is low relative to the cost of capital. If companies want to acquire capital when q is low, they can buy another firm cheaply and acquire old capital instead. Investment spending, the purchase of new investment goods, will then be very low.

According to Tobin an exogenous increase in the money stock is shuffled along through the assets from more to less liquid. Thus, households use the excess supply of money in the first instance to buy bonds (as in Keynes's model), pushing bond prices up, and interest rates down. As interest rates on bonds fall, equities become relatively more attractive than bonds and households switch to equities, driving up their price and lowering the rate of return on them. Firms wishing to expand have the choice of acquiring additional existing capital stock by taking over other firms or investing in new capital stock. As share prices rise, the market valuation of existing firm's increases and takeovers become less attractive than the purchase of new capital stock. Thus, investment increases. The principal determinant of investment, therefore, is the yield on equities (N. Gregory Mankiw 2001).

C. Wealth Channel

Ando and Modigliani were the earliest to take this approach, using the famous life cycle hypothesis of consumption. The basic premise of the life cycle theory is that consumers smooth out their consumption over time. Therefore, what determines consumption spending is the lifetime resources of consumers, not just today's income.

An important component of consumers' lifetime resources is their financial wealth, a major component of which is common stocks. When stock prices raise, the value of financial wealth increases, thereby increasing the lifetime resources of consumers, and consumption should rise. Expansionary monetary policy can lead to a rise in stock prices. So a rise in these prices will increase wealth, thereby raising consumption.

Monetary expansion, which raises Stock prices through the Tobin's q and wealth mechanisms, thus leads to a rise in aggregate demand.

A Monetarist Transmission Mechanism

Monetarist focuses on the direct effect of changes in the relative quantities of assets, rather than interest rates. In monetarist views of the transmission mechanism between changes in the stock of money and the level of nominal income, money is different from all other assets. Consequently, no asset is a good substitute for money but money substitutes equally for all other assets (Keith Bain and Peter Howells 2003).

The logic here is that because various assets are imperfect substitutes in investors' portfolios, changes in the composition of outstanding assets brought about by monetary policy will lead to relative price changes, which in turn can have real effects. Monetarists argue that the Keynesian focus on interest rate as a channel of transmission derives from assuming fixed prices, which leads one to ignore changes in relative prices. For monetarists transmission follows changes in relative prices and occurs via many channels. Monetarists argue that policy actions impact prices simultaneously across a wide variety of markets for financial assets and durable goods.

According to the monetarist view an increase in the money stock leads to an increase in equity price. The rise in prices of real capital assets and the fall in the rate of return on financial assets act to raise the market value of wealth and hence have three effects on consumption; Substitution effect: an increase in money supply reduces interest rates (the opportunity cost of consumption), thereby raising the incentive to consume by borrowing and by running down accumulated assets. Income effect: an increase in money supply reduces interest rate and thus the flow of income and potential future consumption from a level of saving; to maintain the flow of income from assets, consumption must decline and saving must rise today. Windfall gains: an increase in money supply raises asset demand and prices (and thus net wealth) which increases consumption expenditure (Keith Bain and Peter Howells 2003).

The Broad Credit Channel (or the Balance Sheet Channel)

According to Keith Bain and Peter Howells (2003) the broad credit channel operates via the net worth of business firms and households. Firstly, asset prices are especially important as they determine the value of the collateral that firms and consumers may present to obtain loan. Higher collateral values reduce the premium banks impose on borrowers, thereby raising investment and consumption.

Secondly, a rise in money supply reduces lending rates and thereby raises the proportion of safe borrowers in pool of loan applicants – implying less adverse-selection. This enhances more lending, and hence more investment and consumer

spending. Besides, more profitability and higher net worth of firms give firms less incentive to undertake risky activities, and reduce moral hazard. Taking on in less-risky projects makes it more likely that lenders will be paid back, and thus raises bank-lending and investment spending.

Thirdly, monetary expansion may lead to an unexpected rise in price level (P). Where debt payments are contractually fixed in nominal terms, this rise in price lowers the real value of firms' liabilities without affecting the real value of their assets. This, in turn, raises real net worth, thereby reducing adverse selection and moral hazard and rising investment spending.

Distinct from the previous channels, the credit channel discusses the possibility of monetary policy affecting aggregate supply. Lack of access to financial resources (partly explained by asymmetric information) may limit firms' demand for labor. A rise in money supply – by raising firms' net worth and by lowering information-related problems – shifts the demand for labor curve outward. This produces a rightward shift in aggregate supply curve.

The Exchange Rate Channel

In open economies with flexible exchange rates, an additional channel of transmission is the exchange rate channel. With the growing internationalization of economies throughout the world and the advent of flexible exchange rates, more attention has been paid to how monetary policy affects exchange rates, which in turn affect net exports and aggregate output. The exchange rate is currently considered a second instrument of monetary policy and is known for the significance of its channel. It plays an important part in policy making, especially in open economies. In most cases, the real exchange rate is one of the main transmission mechanisms through which policy can affect economic performance.

This channel also involves interest-rate effects, because when domestic real interest rates fall, domestic Birr deposits become less attractive relative to deposits denominated in foreign currencies. As a result, the value of Birr deposits relative to other currency deposits falls, and the Birr depreciates. The lower value of the domestic currency makes domestic goods cheaper than foreign goods, thereby causing a rise in net exports and hence in aggregate output (Keith Bain and Peter Howells 2003).

A rise in money supply pulls domestic nominal interest rate to below its foreign counterpart, promoting net capital outflow and depreciation of the domestic currency. With rigid prices, depreciation implies that domestic goods become cheaper than foreign goods. As a result, net exports (and thus aggregate demand) rise.

According to Ludmilla Buteau (2011) relationship between real exchange rate (RER) and policy goes both ways. The importance of the exchange rate has been emphasized

with the increasing level of co-circulation and the existence of dual currencies that followed the migration of the population from their home countries to more industrialized economies. Indeed, the conventional wisdom regarding remittances is that it is the result of a low level of development; most remitters are immigrants looking to improve their conditions of life.

2.2 Empirical Literature

Carlson (1975) evaluated the St. Louis equation using monthly data of the US economy. The study used changes in nominal GNP (Gross National Product) as the dependent variable and alternative measures of fiscal and monetary actions as the independent variable: narrow money as the measure of the monetary variable and high employment federal expenditures as the measure of the fiscal variable. Taking changes in personal income, an individual's total annual gross earnings coming from wages, business enterprises and various investments, as the proxy to changes in GNP; the study evidenced that monetary policy had strong impact while the effect of fiscal policy was insignificant.

Elliot (1975) examined the relative importance of money supply changes compared to government expenditure changes in explaining fluctuations in nominal GNP. He estimated St. Louis equation with the use of OLS technique. After estimating the equation above the result of his evaluation clearly support the conclusion that fluctuations in nominal GNP more importantly attach to monetary movements than to movements in federal government expenditure in federal government expenditure.

Khan and Knight (1982) used controlled experiments in which the effect of devaluation and domestic credit restraint on price, output, and the balance of payments was examined using a structural model. The model consists of five behavioral equations for inflation, the balance of payments, government sector, real income, and expected inflation and three identities for the domestic credit, money supply and real money balances. The authors carried out a simulation exercise for 29 developing countries for the period 1967-75. The results of this study seem to indicate that domestic credit restraint halts the price level and rather improves the balance of payments. Domestic credit was found to have contractionary effect on output, mainly through the investment function which, in developing countries, depends crucially on the amount of credit available.

Blejer and Khan (1984) estimated a model for 24 developing countries with pooled data over the period 1971-79. The purpose of the study was to search for a well-specified empirical function for private investment in developing countries. The study explored the interaction between government policy and investment. Among other findings, the study documents that tight monetary policy have had adverse effects on

the level of private investment and reduced economic growth. The results seem to indicate that the short run effect on the growth of output of a 10 percent growth in money supply is to reduce output growth, on average, by 0.8 percent over one year period**.** Leiderman (1984) used quarterly data from Columbia and Mexico and reports contractionary effect of monetary restraint i.e. for example; a 10 percent change in the growth of money supply would lead to, on average, a 0.2 percent reduction in output.

Balder R, Pierre L. (1986) use seasonally adjusted quarterly data covering the period 1947 to 1984 to re-evaluate the role of fiscal policy. The period includes a rich Varity of economic events, including the relevant economic tranquility of the 1950s and 1960s, a decade of large oil price shocks, wage price controls, worldwide inflation and proliferation of government regulation of the 1970s, and the government deregulation and monetary restraint of the early 1980s. They use non parametric multivariate spectral methods in particular, and time series methods generally. Their result shows that both monetary and fiscal policy has statistically significant partial coherences with income at cycles of about 6 to 12 quarter. Further they conclude that income monetary policy relation is stronger relative to the conditional income fiscal policy relation in terms of the size and significance of the partial coherence and the gain.

Khan (1990) employed the before after method in his study of 69 countries under the IMF supervision over the period 1973-88. The target variables were the balance of payment, the current account balance, the inflation rate and growth. The results for the one-year before and after comparisons indicate that there appeared to be a substantial improvement in the overall balances of payments and the rate of inflation but the coefficients are insignificant. The rate of growth fell in the program year but the coefficient was also statistically insignificant. In conclusion, Khan pointed out that the programs led to an improvement only in the current account position while worsening inflation.

Haile (2001) empirically tested the reserve flow equation to explore the impact of domestic credit on the balance of payment in Ethiopia using quarterly data for the period 1967/68-99/00. The results seem to suggest that domestic credit restraint will help improve the balance of payment.

Ajisafe, R.A., and Folorunso, B.A. (2002) examines the impact of monetary policy on economic activity in Nigeria through co-integration and error correction modeling techniques. The time series properties of the variables were investigated by conducting a unit root test using annual series data for the period 1970-1998. In the study both narrow money (M1) and broad money (M2) are employed as proxies for monetary policy variable. The result of their analysis shows that monetary rather than fiscal policy exerts a great impact on economic activity in Nigeria**.**

In case of Ethiopia Zekarias (2003) developed a monetary model to the Ethiopian economy using a time series data from 1965/66 to 2001/02. In his analysis he investigated the effect of sustained credit contraction and found that, sustained domestic credit contraction could reduce output with a very little improvement in the net foreign asset position of the country.

Again Zerayehu (2006) presents the model of monetary policy in Ethiopia after financial liberalization is adopted in order to know how National Bank of Ethiopia responds to macroeconomic shocks. In doing so he used domestic credit as monetary policy indicator and found that due to the non-existence of well-developed secondary market, the lack of latitude to engage in discretionary activities, and partial monetization of the economy makes the monetary policy implementation in effective.

Ali (2007) investigated whether fiscal stance or monetary policy is effective for economic growth in south Asian countries. The study utilized autoregressive distributed lag model (ARDL), a co-integration (panel) test, and error correction method (ECM). Time series data that ranged from 1990 through 2007 of four south Asian countries: namely Pakistan, India, Bangladesh and Sri Lanka were employed in the study. The study disclosed that money supply is a significant variable while fiscal balance is reported to have insignificant effect both in the short run and long run. In a nutshell, the study concluded that monetary policy is more powerful tool than fiscal policy in order to enhance economic growth in the case of south Asian economies.

Ludmilla Buteau. (2011) tests the effectiveness of monetary policy in less developed economies using a panel of 14 developing countries. Using the International Financial Statistics dataset published by the IMF, he test for the impact of the monetary policy instrument, the central bank's nominal interest rate, on the economic growth, inflation and also the channel through which the outcome is more significant. The results show that in all of these countries, he shows that monetary policy through interest rate is not as efficient as it should be. The exchange rate channel has a more significant impact when trying to impact growth particularly in countries with very low levels of financial development.

Hameed et al. (2012), investigates the effects of monetary policy up on economic growth in Pakistan using OLS methods for the sample of 1995 to 2010 and 187 observations. They show that interest rate has negative and significant impact on output. Tight monetary policy in term of increase interest rate has significant negative impact on output. Money supply has strongly positive impact on output, and inflation and output is negatively correlated, exchange rate also has negative impact on output which is show from the values**.**

According to Alemayhu (2007) growth in Ethiopia is determined by political economic factors. One of these factors is the quality of public policy which varies from time to

time based on the governing regimes. Surprisingly in his analysis he outlined that the contribution of policies to growth deviation is negative throughout the three periods (Monarchy, *Derg* and EPRDF), but was at its worst under the *Derg* regime.

The existence of better public policy is an assurance for macroeconomic stability. Among public policy monetary policy plays a vital role in stabilizing price and output growth. But in developing countries the effectiveness of this policy is a questionable issue. Those, this paper investigate the impact of monetary policy on output growth in Ethiopia by using vector autoregressive model (VAR) for the period of 1974/75 to 2010/11.

CHAPTER THREE:

3. Methodology

In order to undertake the study annual data on explanatory and dependent variable are collected from different sources. This chapter presents the sources of these data as well as the model specification, the specification techniques and the way of tasting stability of the series.

3.1 Data Source

The study employed a secondary data collected from National Bank of Ethiopia (NBE), Ethiopia Economic Association (EEA), Central Statistic Authority (CSA), and Ministry of Finance and Economic Development (MoFED) as well as from World Bank data set.

3.2 Method of Analysis

3.2.1 Model Specification

The neo-classical Solow model explains economic growth as resulting from the combination of two elements, namely capital and labor. In order to capture how much of the output growth can be attributed to other factors apart from capital and labor Solow decompose the growth in output in to three components capital, labor and total factor productivity (Solow residual). Solow used the Cobb-Douglas production function and started from his simple growth equation and specifies the model as

$$Y = f(A, L, K) \quad \ldots\ldots 3.1$$

Where: Y is aggregate real output, L is labor input, K is capital and A is total factor productivity. The variable A is not constant but varies with different production function based on the factor studies.

Monetarists believe that linkages between the money supply and nominal national income are strong and direct. They perceive the demand for money as stable, so the expansion in the money supply is viewed as generating surplus of money in the hands of consumers and investors. This surplus money when spent quickly increases

aggregate demand. Following the works of Antoine Martin et.al (2006) economic growth is the function of monetary policy.

According to Kavoussi (1984) and Moschos (1987), export expansion raises factor productivity and leads to various benefits, such as more efficient use of resources and adoption of technological innovations, resulting from foreign competition, greater capacity utilization and gains of scale effects associated with large international markets. Growth in real exports tends to cause growth in real GNP for three reasons. First, export growth may represent an increase in the demand for the country's output and thus serve to increase real GNP. Second, an increase in exports may loosen a binding foreign exchange constraint and allow increases in productive intermediate imports and hence result in the growth of output. Third, export growth may result in enhanced efficiency and thus may lead to greater output. Therefor incorporating all this factors the factor productivity is specified as

$$A = (MP, EXP) \ldots\ldots\ldots 3.2$$

Where MP stands for monetary policy and EXP is export. Combining equation (3.1 and 3.2)

$$Y = f(L, K, MP, EXP) \ldots\ldots\ldots 3.3$$

Since it is Cobb-Douglas production function it is specified as

$$Y = f(L^{\alpha1} K^{\alpha2} MP^{\alpha3} EXP^{\alpha4}) \ldots\ldots\ldots 3.4$$

Taking the logarithmic function and taking money supply (MS) as proxy for monetary policy equation (3.4) becomes:

$$\ln Y_t = \alpha_0 + \alpha_1 \ln L_t + \alpha_2 \ln K_t + \alpha_3 \ln MS_t + \alpha_4 \ln EXP_t + e_t \ldots\ldots\ldots 3.5$$

Changing the parameters to $\beta's$ for simplicity the equation is specified as:

$$ln\, Y_t = \beta_0 + \beta_1 \ln L_t + \beta_2\, ln\, K_t + \beta_3\, ln\, MS_t + \beta_4\, ln\, EX_t + e_t \ldots\ldots\ldots 3.6$$

Where:

$\ln Y_t$ -Is the logarithm of real output (real GDP) at time t.

$\ln L_t$-is the logarithm of labor input at time t.

$ln\, K_t$-is the logarithm of capital input at time t which is proxed by Gross capital formation.

$ln\, MS_t$-is the logarithm of real money supply which is proxy for monetary policy at time t.

$ln\, EXP_t$-is the logarithm of real export at time t.

e_t- is error term

$\beta's$ –represent parameters to be estimated.

All βs are expected to be positive.

Definition of Variables

Real GDP (Y): Real gross domestic product (GDP) is a macroeconomic measure of the size of an economy adjusted for price changes. Gross domestic product is defined as the market value of all final goods and services produced in a geographical region, usually a country. Therefore, real GDP was used to capture the overall economic performance.

Real money supply (MS): The money supply is the quantity of money available. Real money is the purchasing power of the money a person holds. It can be computed by dividing the face values of money assets by the price level (M/P). The most common measures for studying the effects of money on the economy are M1 and M2. There is no consensus, however, about which measure of the money stock is best because different measures of money are moving in different directions. The narrowest definition of money M1 includes currency and demand deposits which are easily used in transaction. The definition of broad money (M2) includes the summation of M1, saving deposits and Small-denomination Time Deposits. However, in case of Ethiopia money supply refers to M2. King and Plosser (1984) show that inside money, the component of monetary aggregate such as M2 that represents the liabilities of banking sector is more highly correlated with output movement. Thus the study will employ M2 as proxy for monetary policy. Change in money supply will affect both short term and long term interest rate, foreign exchange values of the currency and the stock prices. In turn, changes in these variables will affect households' and businesses' spending decisions, thereby affecting growth in aggregate demand and the economy. Antoine Martin et.al (2006) shows as economic growth is the function of money growth and they conclude that money supply stimulates economic growth. Thus the sign of β_3 is expected to be positive.

Labor force (L): comprises people who are economically active. That is people who supply labor for the production of goods and services during a specified period (in case of Ethiopia between the age of 15 and 64). It includes both the employed and the unemployed. Since Ethiopia is labor abundant country it is expected to influence output positively. So the sign of β_1 is expected to be greater than zero.

Gross fixed capital formation (K): is defined as the total value of additions to fixed assets by resident producer enterprises, less disposals of fixed assets during the year, plus additions to the value of non-produced assets. This variable will be used as a proxy for the capital stock. An increase in gross capital formation increase output growth and it is expected to have similar effect in case of Ethiopia. So β_2 is expected to be greater than zero.

Real export: consists of the real value of transactions in good and service from residents to non-residents. The revenue from exports made the import of inputs possible that are crucial for development purposes thereby playing as an engine of growth to other sectors. So the sign of β_4 is expected to be positive.

3.2.2 Estimation Techniques

Many economic and financial time series exhibit trending behavior or non-stationery in the mean. Therefore, it is necessary to test the stability of series before the identification of the relationship between variables. The regression analysis among the variables would not be consistent and spurious regression problem would occur if unstable data are used. So the data must be transformed to stationary form prior to analysis.

Stationery and Non Stationery Series

Empirical work based on time series data assumes that the underlying time series is stationary. Stationary implies that the distribution of a process remains unchanged when shifted in time by an arbitrary value. A stochastic process is said to be strictly stationary if its properties are unaffected by a change of time origin; in other words, the joint probability distribution at any set of times is not affected by an arbitrary shift along the time axis (Verbeek, 2006). This implies that the distribution of X_1 is the same as that of any other X_t, and also, example, that the co-variances between X_t and X_{t-k} for any K do not depend upon t. Strict stationarity is stronger as it requires that the whole distribution is unaffected by a change in time horizon, not just the first and second order moments. A time series is strictly stationary if all the moments of its probability distribution are invariant over time. However, the normal stochastic process is fully specified by its two moments, the mean and the variance (Gujarati, 2003).

A weakly stationary series has a constant mean and a constant and finite variance. More formally, a stochastic process is said to be weakly 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 between the two time periods and not the actual time at which the covariance is computed. The term stationary, therefore, refers to the condition of weak stationarity in this study. Thus, a time series (x_t) is stationary if its mean,$E(x_{t)}$ is independent of t, and its variance, $E(x_t - E(x_t))^2$, is bounded by some finite number and does not vary systematically with time (Taylor 1992). Thus, it will tend to return to its mean and fluctuations around this mean will have broadly constant amplitude. A non-stationary series, on the other hand, will have a time-varying mean (or variance) and so we cannot, in general, refer to it without reference to some particular time period.

A stationary time series, exhibits mean reversion in that it fluctuates around a constant long-run mean, has a finite variance that is time invariant, and has a theoretical correlogram that diminishes as lag length increases. Shocks to a stationary time series are necessarily temporary; overtime, the effects of the shock will drive away and the series will converge to the unconditional mean of the series (Enders, 1995).

However, in time series data, the assumption that the error terms from successive observations are uncorrelated is frequently invalid. In practice most econometric time series are non-stationary in the sense that the mean and variance depend on time and thus there are no tendencies for them to hold back to a given value. Non-stationarity is a very series matter in that regression of one non-stationary variable on another is very likely to yield impressive-seeming regression results which are wholly spurious. In a spurious regression, the results suggest that there are statistically significant long-run relationships between the variables in the regression model (very high R^2 value and significant t-ratios) when in fact all that is being obtained is evidence of contemporaneous correlations rather than meaningful causal relations. Non-stationarity of a time series not only presents problems for the consistency of estimation techniques but that the problem of inference is also greatly complicated (Taylor 1992). Besides, there is little point in studying impulse response functions and variance decompositions for a non-stationary series (Johnston and Dinardo, 1997). If a time series is not stationary it is necessary to look for possible transformations that might induce stationarity (Johnston and Dinardo, 1997).

We have encountered two different types of stationary time series models based on whether the trend is deterministic or stochastic. Generally, if the trend in a time series is completely predictable and not variable, we call it a deterministic trend; otherwise we call it stochastic trend. A non-stationary variable of stochastic trend can be transformed into a stationary model by differencing and a non-stationary variable of deterministic trend may be eliminated by detrending (regressing it on time) to make it stationary. A series problem is encountered when inappropriate method is used to eliminate trend. It is important to note that most macroeconomic time series are difference stationary process than trend stationary process (Thomas, 1997: Gujarati, 2003).

Whether a variable is stationary depends on whether it has a unit root. If a variable contains a unit root then it is non-stationary. Thus, regression involving unit root series can falsely imply the existence of a meaningful economic relationship. The first task in analyzing econometric time series data should be then testing for the presence of unit roots. In this case, it is important to test the order of integration of each variable to know how many times the variable needs to be differenced to result in a stationary series.

However, estimating non-stationary models by eliminating trends in variables or by transforming the data so as to make them stationary through the process of differencing cannot be a solution since this procedure throws away potential valuable information about long-run relationship about which economic theories have a lot to say. This poses the question of when it is possible to infer a causal long-run relationship between non-stationary time series. The answer is when the variables are co-integrated. By asking the question whether two or more variables are co-integrated, we are asking the question whether there is any long-run relationship between the trends in these variables. The absence of co-integration leads back to the problem of spurious regression. Hence, the concept of integration mimics the existence of a long-run equilibrium to which an economic system converges over time (Harris, 1995: Enders, 1995).

Unit Root and Co-Integration Analysis

In the work of time series regression, one often obtains a very high R^2 even though there is no meaningful relation among variables. It resulted in spurious regression estimation and the classical t and F tests cannot work well. There for, it is mandatory to test for stationarity of time series data. Hence there are two concepts to be analyzed to have non- spurious estimation outcome. Hence both unit roots test and co-integration analyses are the basic components of time series characteristics.

Unit Root Test

Unit root test has become a widely popular approach to test for stationary. A commonly applied formal test for existence of a unit root in the data is the Dickey-Fuller (DF) test and its simple extension being the Augmented Dickey Fuller (ADF) test. The issue of whether a time series is trend stationary (TS) or difference stationary (DS) time series has both economic and statistical implications. Therefore testing unit root is not questionable and its testing procedure with three possibilities presented below.

Let y_t become a random walk without drift, which is a non-stationary stochastic process. $y_t = \rho y_{t-1} + e_t$ And subtract y_{t-1} from both side of equation to get $\Delta y_t = \delta y_{t-1} + e_t$. Where $\delta = (\rho - 1)$ and Δ is the first difference operator. When y_t is a random walk with drift it becomes: $\Delta y_t = \beta_1 + \delta y_{t-1} + e_t$(it is stationary with a nonzero mean equal to $\frac{\beta_1}{1-\rho}$ and a case where random walk with drift around a stochastic trend: that is, $\Delta y_t = \beta_1 + \beta_2 t + \delta y_{t-1} + e_t$ (it is stationary around a deterministic trend).

Formulate Hypothesis testing: H0: $\delta = 0$ or $\rho = 1$. If it is zero, y_t is non-stationary but if it is negative, we conclude that y_t is stationary. As sited in Harris (1995), Dickey and Fuller have shown that under the null hypothesis, the estimated value of the coefficient that follow the τ (tau) statistic, which is called Dickey and Fuller (DF) test.

Also as sited in Harris (1995) (Dickey and Fuller (1981), Said and Dickey (1984), Phillips and Perrson (1988) and other) developed modifications of the DF test when the error term, e_t is not white noise. These tests, called the Augmented Dickey-Fuller test (ADF).

In this study the Augmented Dickey fuller test is applied which involves estimating the following regressions.

- A random walk without drift:

$$\Delta y_t = \delta y_{t-1} + \sum_{i=2}^{p} \theta_i \Delta y_{t-i+1} + e_t \quad \ldots\ldots 3.7$$

- A random walk with drift:

$$\Delta y_t = \alpha_t + \delta y_{t-1} + \sum_{i=2}^{p} \theta_i \Delta y_{t-i+1} + e_t \quad \ldots\ldots 3.8$$

- A random walk with drift around a stochastic trend:

$$\Delta y_t = \alpha_t + \alpha_2 t + \delta y_{t-1} + \sum_{i=2}^{p} \theta_i \Delta y_{t-i+1} + e_t \quad \ldots\ldots 3.9$$

Testing for unit roots using equation [3.7] assumes that the underlying data generating process has no intercept term and time trend. To account for the existence of an intercept term, equation [3.8] is used. Equation [3.9] suggests using intercept and deterministic term to test for the unit root. In all of the above three equations, if δ=0, then y_t series contains a unit root.

After estimating the equations, the appropriate critical values to be used to test for the presence of a unit root is provided by Dickey Fuller in which the critical values are different for three regressions. After estimating the equations using OLS, the resulting t- statistics is compared with the respective critical values given in Ducky Fuller tables.

Co-integration Analysis

The analysis of short-run dynamics is often done by first eliminating trends in the variables, usually by differencing. This procedure however throws away potential valuable information about long-run relationships about which economic theories have a lot to say. Hence the theory of co-integration addresses this issue on integrated short-run dynamics with long-run equilibrium. In the presence of co-integration, the valuable long-run relationships can be preserved since estimation will not be spurious, as long as the variables are integrated and co-integrated.

The economic interpretation of co-integration is that if two (or more) series are linked to form an equilibrium relationship spanning the long-run, then even though the series themselves may contain stochastic trends (i.e. non-stationary) they will nevertheless move closely together overtime and the difference between them will be stable (i.e. stationary) (Enders,1995). Therefore, it is important to view co-integration as a technique to estimate the equilibrium or long-run parameters in a relationship with unit root variables. In contrast lack of co-integration suggests that such variables have no long run link, in principle they can wonder arbitrarily far away from each other.

In order to determine whether or not a long-run equilibrium relationship exists among the non-stationery variables in a given model, we need to test empirically that the series in the model are co-integrated. So far there are two major procedures to test for the existence of co-integration, namely, the Engle-Granger two step procedures and the Johansen Maximum Likelihood Estimation procedure (Harris 1995).

In the Engle-Granger two-step procedure, variables entering the co-integrating vector are tested for integration of the same order; in fact order of one I(1). The first step is to estimate the long-run static model of the I(1) variable and obtain residual. If this residual, which is the linear combination of the variables or the disequilibrium, is stationary, then the variables are said to be co-integrated.

The second step in this procedure is to estimate the error correction model (ECM) in which the first difference of the dependent variable is regressed on the first difference of explanatory variables with their appropriate lags, and the first lag of the residual obtained in the first step.

Although the Engle and Granger procedure is easily implemented, it has several important defects. In the first place, the method has no systematic procedure for the separate estimation of multiple co-integrating vectors. The method only allows for a single co-integration equation. In fact, if there are n variables in a model there may be at most n-1 or less co-integrating vectors. Another serious defect of the Engle-Granger procedure emanates from the fact that the estimation of the long-run equilibrium regression requires that the researcher place one variable on the left-hand side (as endogenous) and use the others as regressors (exogenous). However, the test for co-integration should be invariant to the choices of the variable selected for normalization. In other words, there is a possibility that more than one equation may depict the long-run relationships among the various variables.

The Johansen Maximum Likelihood Estimation procedure avoids the use of two-step Engle-Granger procedure and can estimate and test for the presence of multiple co-integrating vectors. Johansen procedure also allows testing restricted versions of co-integrating vector(s) and speed of adjustment parameters for the purpose of testing a

theory by drawing statistical inferences concerning the magnitudes of the estimated coefficients. In this procedure, the existence of co-integration relationship is tested using vector error correction mechanism (VECM) and arbitrary selection of endogenous and exogenous variables is avoided. Owing to its apparent superiority to that of the Engle-Granger methodology, in this study the Johansen Maximum Likelihood Procedure is applied for empirical analysis (Harris 1995).

The Johansen procedure is a multivariate generalization of the Dickey-Fuller test [Enders, 1995]. Under this procedure the variables under consideration are by vector auto regressive (VAR) of lag p given by:

$$Z_t = A_1 Z_{t-1} + A_2 Z_{t-1} + \cdots \ldots \ldots \ldots \ldots \ldots \ldots . A_p Z_{t-1} + \varepsilon_t$$

Where:

Z_t is the $(nx1)$ vector $(Z_{1t,} Z_{2t} \ldots \ldots Z_{nt})$ and A_i is an (nxn) matrix of parameters. The error term ε_t is an independently and identically distributed n-dimensional vector with zero mean and variance matrix $\sum\varepsilon$

The above equation can be written in vector error correction model (VECM) as:

$$\Delta Z_t = \sum_{i=1}^{p-1} \pi_i \Delta Z_{t-1} + \Pi Z_{t-1} + \varepsilon_t$$

In the above formulation, the rank of the matrix Π is equal to the number of independent co-integrating vectors. If rank (Π) = 0, the matrix is null implying no co-integration. If instead, Π is of rank n, then the vector process is stationary. For cases in which 0<rank (Π) <P, then there are multiple co-integrating vectors and in particular if rank (Π) = 1, then there is a single co-integrating vector and the expression πZ_{t-1} is the error-correction factor.

The rank of a matrix is equal to the number of its characteristic roots (λ_i) that differ from zero. Once Π and (λ_i)'s estimated, the test for the number of characteristic roots that are insignificantly different from unity can be conducted using the trace λ (r) and max λ (r) statistics [Harris, 1995].

One-way of estimating this model is using simultaneous equations approach, but with lags in all the variables. Such a model is called a dynamic simultaneous equations model. However rather than formulating using classifying variables endogenous and exogenous as well as imposing some constraints on the parameters to achieve identification, Sims(1980) argues that both these steps involve many arbitrary decisions and suggests as an alternative, the vector auto-regressive approach.

Use of co integrated VAR model helps account for spurious correlations, and exogeneity bias as it is designed for non-stationary time series and requires no endo-

exogeneous division of variables. Further vector error correction model embodied in co integrated VAR technique distinguishes clearly between long- and short-run impacts and responses, providing a suitable tool for policy analysis. The another advantage of using a VAR model is that it is used for forecasting and specially in analyzing policy implications and through the impulse response functions you can best evaluate the impact of a change.

In a VAR model, none of the variables is exogenous, that is, each variable potentially influences all other variables, considering each is expressed as a function of the lagged values of the selected variables. The economic importance of a variable in the VAR model is measured by looking at its impact on the other variables using the variance decomposition and by the impulse response function table and graph.

In order to test for the effectiveness of the monetary policy in stimulating output growth this paper employed a simple co integrated VAR model combing co-integration analysis and vector Auto-regressive time series.

The VAR model where case n>2 and k>1, that is a general VAR model containing n variables and k lags is

$$Z_t = \delta\vartheta + A_1 Z_{t-1} + A_2 Z_{t-2} + A_3 Z_{t-3} + \ldots\ldots\ldots + A_n Z_{t-n} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.10$$

Where: Z_t is an nx1 vector that containing n variables in the system (namely: - RGDP, capital, labor force, real export and money supply), ϑ is a vector holding deterministic terms like trend, intercept, Dummies, ε_t is an n dimensional vector of multivariate random errors with zero mean and covariance matrix Σ, i.e. $(e1t, e2t) = 0$ that is innovation term and $A1, A2, A3 \ldots An$ are nxn matrices of coefficient to be estimated.

When the variables in the VAR are integrated of order one or more, unrestricted estimation is subject to the hazards of regressions involving non-stationary variables. However, the presence of non-stationary variables raises the possibility of co-integrating relations. An important issue in econometrics is the need to integrate short-run dynamics with long-run equilibrium. The analysis of short-run dynamics is often done by eliminating trends in the variables, usually by differencing. This procedure, however, throws away potential valuable information about long-run relationships.

There are several methods of tackling these problems. The theory of co-integrated developed in Granger and elaborated in Engle and Granger addresses this issue of integrated short-run dynamics with long-run equilibrium. But, due to some limitation of Engle and Granger the maximum likelihood approach, laid out in a series of papers by Johansen, seems to have attracted the most attention from applied researchers and software developers (Johnston and Dinardo, 1997). Likewise, Johansen's maximum likelihood approach was employed in this study. Hence rather than the paper employs

a simple vector Auto regressive time series, the model incorporates co- integrating regression with VAR model.

Following the maximum likelihood approach of Johansen, a vector error correction model (VECM) representation of the VAR (p) model can be written as:

$$\Delta Z_t = \pi Z_{t-1} + \sum_{i=1}^{p-1} \gamma \Delta Z_{t-i} + \delta\varphi + \varepsilon_t \quad \ldots\ldots 3.11$$

The rank of matrix π gives the dimension of co-integrating vectors. If its rank, r, is (0<r<n) then π can be decomposed in to $\pi = \alpha\beta'$; where α and β' are nxr matrices containing adjustment coefficients and co-integrating vector coefficients, respectively.

Hence, equation (2) reduced to:

$$\Delta Z_t = \alpha\beta' Z_{t-1} + \sum_{i=1}^{p-1} \gamma \Delta Z_{t-i} + \delta\varphi + \varepsilon_t \quad \ldots\ldots 3.12$$

This means $\alpha\beta' Z_{t-1}$ contains all the long run information on the process of ΔZ_t. Specifically, the rows of β' are interpreted as the distinct co-integrating coefficients and the raw of α shows the speed of adjustment speed of dependent variable towards the long run equilibrium condition.

Generally, the ECM relates the change in the dependent variable to the change in independent variable(s) and the long-run relationship lagged say here one period. If variables are co-integrated is I (o), all terms in the ECM are stationary. This equation shows how long run impacts and responses on the elements of Zt are incorporated in the short-term dynamics. Where $\Pi = -I + A1 + A2 + A3 + \cdots + AK$ and $\gamma 1 = -(A1 + A2 + A3 \ldots + AK)$, $\gamma 2 = -(A2 + A3 + \cdots + AK), and \quad \gamma k - 1 = -AK$. $If\ Zt\ is\ I(1)$, then $\Delta Zt\ is\ I(0)$.

To investigate the impact of monetary policy on real output growth the impulse response functions (IRFs) derived from vector auto-regressions (VARs) approach was used. The IRFs show the response of each variable in the system to shock from system variables.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.1 Descriptive Analysis

Observing the trends, as well as the relationship between money supply and GDP is helpful for supporting the empirical evidence. Again describing the features and frameworks of monetary policy helps us to understand the level of the financial development of the country. So this part describes the features and frameworks of monetary policy in Ethiopia during the study period.

4.1.1 Features and Frameworks of Monetary policy in Ethiopia

Features of Monetary Authorities and Monetary Policy in Ethiopia

In a case of Ethiopia, the feature of monetary policy depends on the existed economic system and political condition of the government followed: Monarchy regime, command economy (*Derg* regime) and market-oriented economy. However the study concentrates on the last two periods of monetary features.

During the command economic system (1974-1991) in Ethiopia privet banks and financial institutions are nationalized and there where direct monetary controls, and Central Regime and planning regulated the whole policy. The National Bank of Ethiopia was allowed to participate actively in national planning, specifically financial planning, in cooperation with the concerned state organs. Under socialism, monetary policy used under the direct methods, in which the chief features were: fixation of interest rates at low level/repressed rates, differential interest rates for different uses and different sectors, direct credit allocation (discriminatory allocation of credit in which social sectors like health, housing, education etc. got a priority), direct deficit financing and, fixation of exchange rates, and control on new entrants in financial market. Organizational setups were taken in order to create stronger institutions by merging those that perform similar functions.

During this period foreign assets were apparently scarce due to poor external sector, fixed exchange rate that penalized the export sector and a number of restrictions like restriction on the import of some goods, rationing foreign exchange through licensing, and introduction of protective tariff rates, so that the domestic banking sector fails to serve as means of financing budget deficit. Therefore the expansion of domestic credit that enhances aggregate demand including demand for to be imported commodities was constrained by the scarcity of foreign assets (MoFED 1999).

The National Bank of Ethiopia set the interest rate structure in such a way that it discourages private sector and favors public institutions and specially cooperatives and associations. Accordingly, the private sector was charged the highest rate in all kind of loans. For example, Agricultural loan was 7 percent for private, 6 percent for state enterprises and 5 percent for cooperatives. The borrowing rate for private sector ranges from 7 percent to 10 percent, it was 4.5 percent to 8 percent for state enterprises but for cooperatives it ranges from 4.5 percent to 6 percent. The interest rate discrimination against private sector was not only in borrowing but also in deposit. The maximum rate, for instance, paid for private was 5.5 percent for time deposit over 5 years whereas it is 7.5 percent for others. For saving deposit in excess of Birr 100 thousands, interest rate was only 2 percent**.**

During the command era inflation averaging 9.7 percent (which is caused due to reduction in Agricultural production), money supply and domestic credit grows at average of 10.8 and 5.98 percent respectively and the real interest rate was negative. Moreover, private sector's investment was celled at Birr 500 thousands and the exchange rate was fixed at 2.07 percent. This resulted in discouragement of saving and investment by privet sector and it intern encourages black markets and illegal activities. Following this policy relative stability in the macroeconomic situations was achieved at the cost of overall economic growth because of limited private sector participation and poor resource utilization in the socialized sector. Financial intermediation and the development of financial sector were also severely affected by lack of adequate incentives and the overall economic growth was affected harshly. Between 1974/75 and 1989/90, economic growth was decelerated from 4 to 2.3 percent (-0.4 percent in per capita terms). Growth was also extremely irregular given its dependence on the agricultural sector, which is vulnerable to the vagaries of nature (Alemayehu 2007). The *Derg* Regime was also characterized by intense conflict, which accentuated the dismal growth performance. This weak result is attributed, among other things, to poor performance of the agricultural sector, huge military spending and very protective and inward looking trade policy.

The new government comes to power in May, 1991 with vast economic reform and financial liberalization based on structural adjustment program lunched by IMF and World Bank. Following this policy change the private sector was given emphasis and the government started to withdraw from the market step by step by privatizing its enterprises. This was part of the general economic liberalization process, which also touched the financial sector. Accordingly, National Bank of Ethiopia was restructured in a manner to conduct monetary policy independently and supervise financial institutions in the country. Monetary and Banking Proclamation of 1994 established the National Bank of Ethiopia as a judicial entity, separated from the government and outlined its main functions. Since 1994 the government of Ethiopia has permitted private banks and insurance companies. Monetary and Banking proclamation No 83/1994 and the Licensing and Supervision of Banking Business No. 84/1994 laid down the legal basis for investment in the banking sector. These services are limited to domestic concerns. Foreign firms are prohibited from investing in the banking and insurance sectors (MoFED, 1999).

The role of National Bank of Ethiopia (NBE) in the financial sector grew following the establishment of private banks and insurances. The slipping away of direct control power on money supply and the unpredictability of the private sector necessitated indirect controlling mechanism of money supply. The fixed exchange regime was changed to floating exchange regime. Discriminatory interest rate system was removed. In order to bring stability in price and output fluctuation, the new

government lunched indirect monetary policy like Open Market Operation rather than direct monetary policy control. Economic growth during the period of 1990/91-1999/00 was quite impressive. Money supply and domestic credit grows at 13.8 and 4.3 percent respectively. Real total and per capita GDP grew at average rates of 3.7 and 0.7 percent per annum, respectively, figures that rise to 5.6 and 2.6 percent, respectively, if one excludes the abnormal years 1990-92. Real GDP grew by 8.7 on average during the period of 2000/01 to 2010/11. The revival of growth appears to be the combined result of the reforms and favorable weather.

A new proclamation was issued in 1994 to reorganize the NBE according to the market-based economic policy so that it could foster monetary stability, a sound financial system and such other competitive credit and exchange conditions as are conducive to the balanced growth of the economy of the country. Autonomy was given to other banks and insurance companies. An inter-bank-money market was also made operational. Exchange rate was also devalued from Birr 2.07 to Birr 5 per US dollar.

Broad objectives of the current monetary Policy are to foster monetary stability and a sound financial system, and to ensure that credit and exchange conditions are conducive to the balanced growth of the economy of Ethiopia. In addition, the detailed objectives are reducing inflation, build international reserves, create a favorable external environment of banking, regulate the supply and availability of money & credit and applicable interest, build internal dynamics of banks; and fostering contestability of markets within the banking sector, improve the environment within which banks operate, narrow down the asymmetry of information, induce a culture of loan repayment, and promote efficiency, capacity building and competition.

Monetary Development and Policy in Ethiopia Since 1974

There are many monetary policy frameworks through which monetary policy will achieve its objectives. However, this frameworks different from country to country and from time to time depending on the level of economic development, macro-economic condition and political system as well as on the structure of financial development. In developed countries the most common monetary policy transimtion mechanisms are exchange rate channel, interest rate channel, credit and asset price channel. Due to under development of the financial structure in developing countries asset price is not used most of the time, rather they use monetarist channel, credit channel (Bank lending channel) and to some extent exchange and interest rate channel.

Money Supply

The growth of money supply during the pre-revolution (1974) period was quite modest. For example during the period 1966/67-1972/73 the average growth rate of M2 was around 9.3 percent per annum as compared to a 5.4 growth in nominal income. In the

following governance regime, however, the average growth rate of M2 surged to two digit figures. The command economy that the country followed during the military regime preordained that there could be direct control on money and its components. In line with the "socialist" ideology, the government nationalized all private banks, imposed a credit ceiling on banks, set up administered interest rates so as to favor public enterprises, channeled credit to priority areas and introduced controlling mechanisms on money.

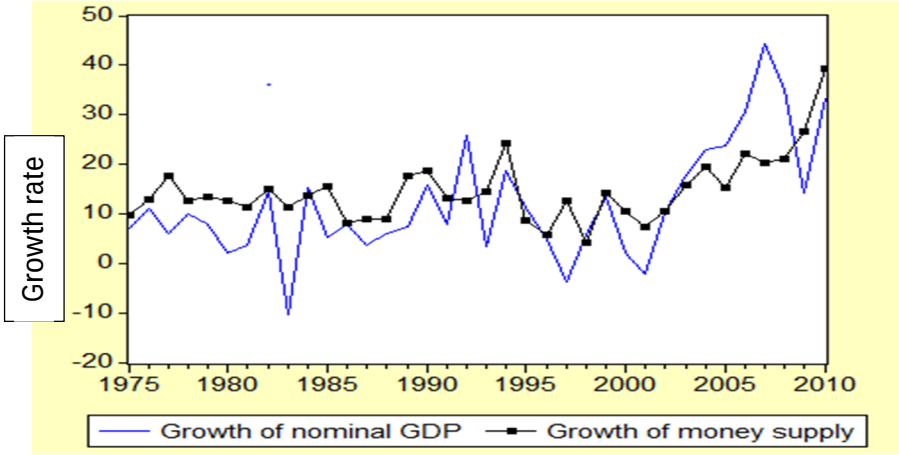
During the Derg regime the growth rate of money supply reaches its maximum, which is 18.69 percent, in 1990/91 due to the rise in its determinant namely the growth of base money by 22.94 percent (which is mainly due to the rise in money in circulation) and domestic credit by 18.03 percent. The change in interest rate structure in 1986/87, which constrained the interest rate at 2 percent for the saving in excess of 100,000 Birr and for time deposit at 1 percent to 5 percent discouraged the saving at this time and resulted in the reduction of quasi money by 11.499663 and base money by 6.03469. As a result money supply registered its minimum growth at this time during Derg regime. The average growth rate of money supply during 1974/75 to 1991/92 was 12.91 percent.

Despite the prevalence of negative real returns on deposits, savings have been growing at about 10 percent per annum during the 17 years of the *Derg* mainly due to the absence of alternative investment outlets. This has enabled the government to channel financial resources to the "socialized" sector while maintaining a stable macroeconomic environment in the face of faster money supply growth than the nominal value of the production of goods and services in the economy. The foreign reserve of the country during the *Derg* period was so low having small contribution for growth of money supply.

Due to the consequence of the coffee export booming and the substantial increment in credit expansion to the private sector, there was a significant change in the growth of money supply during 1994/95. It continues with fluctuations due to the Ethio-Eritrea conflicts during 1998/99 and the drought occurred all over the country in 2001/02 highly affect the growth rate of money supply. However, since 2002/03 the annual growth rate of money supply shows a consistence rise except for the year 2005/06 and 2007/08. The average growth rate of money supply declines from 19.58 percent in 2004/05 to 15.33 percent in 2005/06. The main cause for this reduction was the decline in net foreign asset by 12.7 percent and a reduction of reserve money or base money due to a 34 percent decline in commercial banks' reserve at National Bank of Ethiopia because of the increased purchase of treasury bills. Also in 2007/08 net foreign assets, declined by 12.6 percent and reached Birr 11.7 billion mainly reflecting the continued widening of the current account deficit and hence resulted in the

contraction of money supply. Graphically the growth rate of nominal money supply and nominal GDP is illustrated in figure 4.1.

Figure 4.1 Growth Trends in Broad Money Supply and Nominal GDP



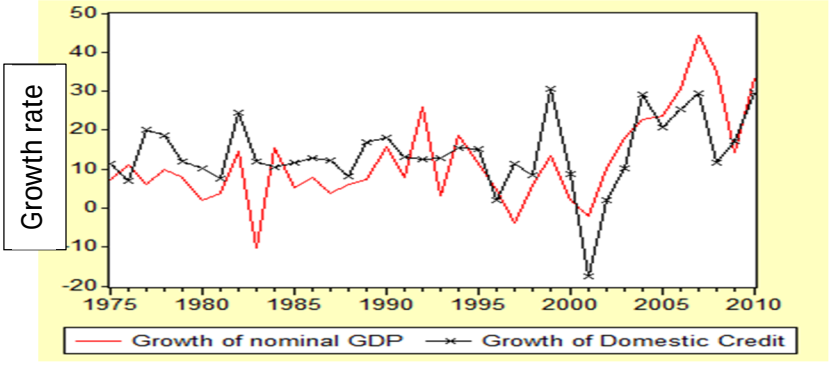
Source: Researcher sketching using data from National Bank of Ethiopia

As it is illustrated in figure 4.1 the growth rate of money supply and nominal GDP shows a fluctuation over time. Except for the year 1984/85, the growth rate of money supply is higher than the growth of nominal GDP throughout the *Derg* regime. However, following the policy change in 1992 the growth of nominal GDP starts to become higher than the growth of money supply. But it did not sustained for many years. The rise in money supply in 1994/95 following the coffee export booming as well as the reduction in GDP following the Ethio-Eritrea war makes the growth of money supply higher than the growth of nominal GDP. But due to the tight monetary policy used since 2002/03 the gap between growth of money supply and nominal GDP becomes narrowed this higher and fluctuating gap shows the inflationary pressure of money supply.

Domestic Credit: During the command economic era banks had very little authority in their lending activity as the government compelled them to provide credit for public enterprises and cooperatives. Consequently, claims on central government (net) grew on average by 25 percent during 1974/75-1991/92. The increase was, in some measure, due to the government's decision to bring down the debt-equity ratio of the public enterprises. This was achieved mainly through a substantial sale of bonds by the treasury to the banking system. When the recapitalization of public enterprises was completed during the 1984/85-1987/88 period, the contribution of this component to domestic credit subsided to an average of 11.7 percent for the period 1987/88-1991/92.

The average growth rate of domestic credit during the *Derg* period was 13.12 of which it reaches its maximum (24.53 percent) in1982/83. The main cause of the rise in domestic credit in 1982/83 was the rise in domestic credit to government sector by 66.51 percent due to the increase in overall budget deficit than the previous seven years. In the same year the growth rate of domestic credit to the privet sector declined to 9.30891 and shows a variation of 23.12 percent from the previous year. Generally, over the period of 1974/75 to 1990/91 the average growth rate of domestic credit to central government was 18.3 percent while for the privet sector it was 7.6 percent. During 1992/93-1997/98, the growth in credit to the government declined from its peak of nearly 28 percent in 1989/90 to 2.2 percent in 1995/96 due to privatization policy. On the other hand, claims on other sectors grew on average by 27.4 percent. An increase in credit demand by the privet sector resulted in growth of money supply in this time.

Figure 4.2 Growth Trend in Domestic Credit and Nominal GDP



Source: Researcher sketching using data from National Bank of Ethiopia

As the figure 4.2 shows the growth rate of domestic credit shows higher fluctuation every year reaching its maximum in 1999/00. During this time credit by commercial banks rise by 59 percent and claims on the government rises by 54 percent. In 1999 the current deficit reaches its maximum which is 6232.4 million Birr and the deficit as percentage of GDP and expenditure also reaches its maximum which is 9.4 and 35.5 percent respectively. This leads to rise in claims on government. The growth rate of domestic credit is higher than the growth rate of nominal GDP throughout during the *Derg* regime. This is mainly due to the reduction in the economic growth and the rise in claims on central government.

Following the liberal policy the economy starts to grow and the growth of nominal GDP becomes higher than that of the growth of domestic credit. The reduction in claims on central government following the privatization policy is one reason for the reduction in growth of domestic credit. But the unfavorable economic condition of

1996/97 -1999/00 leads to the reduction of nominal GDP relative to the growth of domestic credit. Since 2000/01 both nominal GDP and domestic credit growth over time, but the growth in nominal GDP is higher than the growth of domestic credit.

Growth Rate Ratios of Monetary Aggregates and Components of Broad Money

During 1979/80-1992/93 the average annual growth rate of the ratio of domestic credit to money supply was 0.21 percent. During the same period the average annual growth rate of domestic credit to central government and to non-central government as a ratio of total domestic credit was 4.27 and negative 4.60 percent respectively. This is one symptom of the discrimination of privet sector. The average annual growth rate of the ratio of M1 to money supply (M2) was 0.57 percent while the ratio of quasi money to broad money shows a decline in its average annual growth over this period due to the discriminatory and discouraging interest rate structure of the period. So that money supply was raised mainly through the rise in base money. Due to poor foreign relation performance of the *Derg* regime the contribution of net foreign asset to M2 was too low.

Following the liberalization policy in 1992/93 among the determinants of money supply the average annual growth rate of net foreign asset as a ratio of M2 took the largest share. In contrast to the previous regime the average annual growth rate of domestic credit by central government as the ratio of total domestic credit declined by 13.45 percent while claim on non-central government as a ratio of domestic credit shows a growth of 10.58 percent on average. The rise in credit to privet sector and its decline to central government was mainly the output of the privatization policy. However, over the period of 1998/99 to 2003/04 the average annual growth rate of all the determinant of money supply (except the ratio of claim on central government to domestic credit) as a ratio of M2 declined due to the unfavorable condition of the period, especially the Ethio-Eritrea war and the drought of 2001/02 over the country at this period.

The favorable interest rate structure of the post 1992/93 leads to the dramatic improvement in the growth rate of the quasi money as the ratio of M2. Since 2004/05 there is an improvement in the overall determinants of money supply. But claim on central government as a ratio of domestic credit show a reduction in its average growth because of the shift in domestic credit towards the privet sector.

Table 4.1.1 Average Annual Growth Rate Ratios of monetary Aggregates and components

YEAR	DC/M2	DCG/DC	DCNG/DC	M1/M2	QM/M2	NFA/M2
1979/80- 1991/92	0.20495	4.27055	-4.60577	0.57545	-1.39804	
1992/93-1997/98	-1.15478	-3.69348	10.56429	-3.96401	9.19339	55.80299
1998/99-2003/04	-3.03923	2.01439	-1.89922	-1.69341	2.32072	6.89058
2004/05-2010/11	0.08755	-13.4509	10.58304	-0.30702	0.40868	3.04674
1992/93-2010/11	-1.2923	-5.48587	6.63535	-1.89966	3.78660	18.98254

Where: Dc-domestic credit, DCG-is domestic credit for central government, DCNG-is domestic credit to non-central government and QM- is quasi money

Source: own computation based on Data from National Bank of Ethiopia

As illustrated in table 4.1.1 over the period of 1979/80 to 1991/92 among the determinant of money supply the main contributor to the growth of money supply is base money (M1). It's ratio to M2 (broad money) growth on average at 0.57 percent each year. The average growth rate of the ratio of quasi money to broad money was negative showing low level of time and saving deposit due to the discouraging interest rate and low level of saving. The growth rate of the ratio of domestic credit to broad money shows an increase by 0.20 percent on average. But the growth of share of domestic credit to non-central government shows a decline throughout this period**.**

Following the liberalization policy among the determinant of money supply, the ratio of net foreign asset to broad money registers the higher annual average growth. Again since 1992 the ratio of quasi money to broad money growth on average by 3.78 percent but the ratio of base money to broad money decline on average by 1.89 percent. This is due to the favorable foreign relation, adoption of flexible exchange rate, privatization policy as well as the tight monetary policy of the regime towards inflation. Regarding the domestic credit, its annual growth rate as a ratio of broad money was negative. But unlike the previous regime in which the share of domestic credit to central government accounts the largest, the annual growth of share of domestic credit to central government decline by 5.48 percent on average. But its share by non-government rises on average by 6.65 percent due to the privatization policy.

Exchange Rate Structure in Ethiopia

In terms of relevant policy formulation, exchange rate stability has been recognized as a useful instrument to aid in overall stabilization efforts. As a matter of fact there is no universally accepted and therefore recommended one exchange rate policy. However, it can be said that an appropriate foreign exchange rate policy could be recommended on the basis of its specific macroeconomic policy objectives.

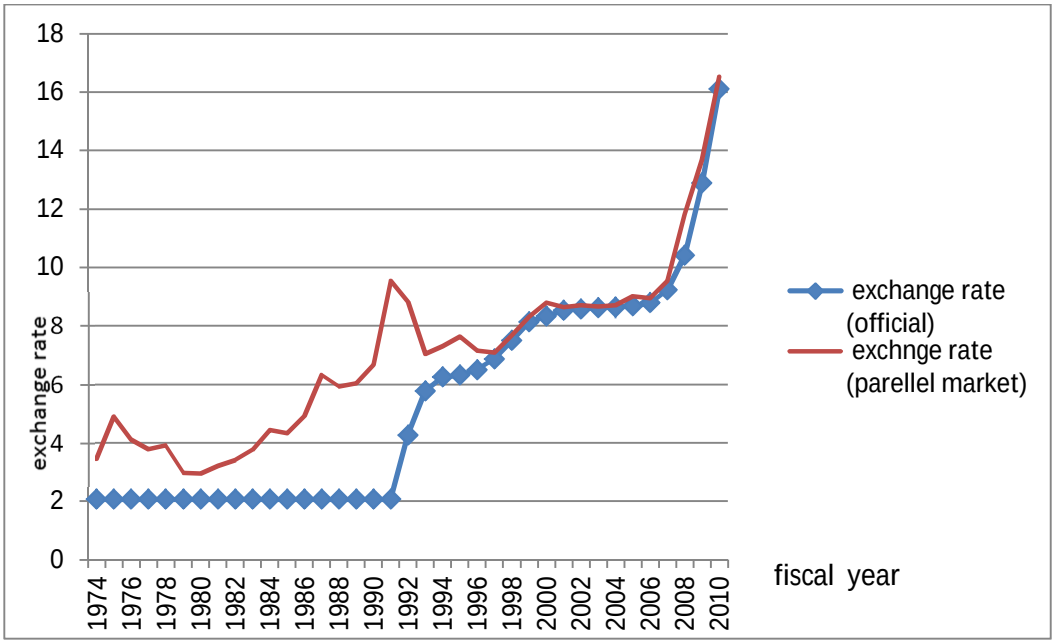
Macroeconomic policies in Ethiopia are mostly initiated in response to internal and external imbalances. The underlying economic disequilibria in these economies are associated with, mainly, structural rigidities and in several cases are seriously compounded by devastating droughts and political instability. During the command economic system the country was experiencing fixed exchange regime, but in the past two decades the country is experiencing flouting (flexible) exchange which aims principally at raising the economy capacity to produce tradable and which mostly involves the adjustment of exchange rate with the specific aims of correcting payment disequilibria through price incentives.

The Ethiopian Birr was first introduced in 1945 with an official exchange rate of Birr 2.48 per US dollar. A small adjustment was made in 1964, which devalues the rate to Birr2.5 per US dollar. In December 1971 when US dollar was floated and ceased its convertibility to gold, the Birr appreciated to a rate of Birr 2.3 for one US dollar. The currency further appreciated to Birr2.07 in 1973 and it remained at this rate until October 1992 when it was devalued to Birr 5 for one US dollar.

During the command economic system the exchange rate is fixed at Birr 2.07 for one US dollar. This leads to the devaluation of exchange rate in the parallel market. Large parallel market premium is an incentive for exporters and producers to channel their export to the illegal market, which leads to a reduction of foreign exchange earnings from exports. Consequently, a reduction in foreign exchange earning leads to low level of inputs (imports) and low level of GDP. Therefore a parallel market has a negative impact on economic growth so that to reduce/eliminate these, exchange rate liberalization as the introduction of interbank exchange rate is helpful.

Following the liberalization policy in1992 the new government of Ethiopian adopted flexible exchange rate policy to achieve export promotion strategy. The exchange rate was devaluated from Birr 2.07 to 5 for one US dollar. However since the devaluation of domestic currency made the deviation started to narrow down and, in some cases, even the real effective exchange rate indicating that the overvaluation of the Birr has substantially been reduced and the parallel market exchange rate premium has declined significantly. Therefore, following the devaluation of the Birr the gap between the official and parallel exchange rate has declined.

Fig 4.3 Exchange Rate Structure in Ethiopian (official and parallel)



Source: Ethiopian Economic Association Data Set (2012)

The exchange rate policy during 2010/11 was geared towards boosting exports and restoring the international reserve position of the country towards its target. During 2010/11, the official exchange rate of the Birr against the Dollar (the average weighted rate) stood at Birr 16.1178, showing a depreciation of 25.0% as compared to the previous fiscal year. On the other hand, the average parallel market rate stood at Birr 16.6292, showing 20.8% depreciation and a 2.3% variance from the official average weighted rate.

Interest Rate Structure in Ethiopia

Like other monetary variables interest rate structure of Ethiopia varies from regime to regime depending on the economic system and political condition. During the *Derg* regime it varies depending on the amount of capital, and the lending rate varies depending on the parties to whom it was lent (state, cooperative, individual and privet organization, and financial institution)

From 1974 to 1985 the deposit interest rate was vary depending on the time of the deposit. For the deposit of 30 days to 6 month the deposit rate was 4 percent and if it is for 6 to 12 month the deposit rate rises to 5 percent but for the one which is more than 12 month it was 6 percent. The lending rate at this time was also fixed at 7.5 to 9.5 for exports and at 8.0 to 10.0 percent for other. However, the rate on treasury bills (only

91 days Bill is available for 1974 to March 1983) varies from month to month. The Treasury Bills on 28 days and 182 days are not available during this regime. The interest rate on time saving was fixed at 6 percent during *Derg* period.

Table 4.1.2 Interest Rate Structure in Ethiopia (1974-1985)

year	Bank Rates					
	Deposit Rate				Lending Rate	
	Savings	Time			Exports	Others
		30 days - 6 Months	6 - 12 Months	> 12 Months		
1974-1985	6.0	4.0	5.0	6.0	7.5 - 9.5	8.0 - 10.0

Source Ethiopian Economic Association Data Set (2012)

Since 1986 to 1993 the interest rate on saving depends was based on the amount of capital saved. For the capital up to Birr 100,000 it was 6 percent and if it is in excess of birr 100,000 it was 2 percent. The lending rate for cooperatives was 4.5 up to 6 percent, for state it was 3.0 to 8.0 percent, for individual and privet organization it was 6 to 9.5 percent and for financial institution it was fixed at 2.5 to 4 percent. During this time treasury Bills are not available. Generally, the interest rate structure during the command economic era in Ethiopia was a discouraging and discriminatory especially for privet sectors.

Table 4.1.3 Interest rate Structure in Ethiopia (1986-1993)

		Rate in percent
Saving	Up to Br. 100,000	6
	In excess of Br. 100,000	2
Time	Financial institutions and government Under take in (1 year)	1
	Time association (1,2,3&5year)	4.0,4.5,5.0,5.4
Lending	Cooperatives	4.5-6.0
	State	3.0-8.0
	Individual and privet organization	6.0-9.5
	Financial institution	2.5-4.0

Source: Ethiopian Economic Association Data Set (2012)

Following the liberalization policy the trend has total changed in 1993. Deposit rates were not depends on the amount of capital and lending rate varies depending on the

economic activity on which the money is invested. The saving deposit rate was 10 percent and the time deposit varies depending on time. The deposit rate on 30 days' notice was 10.5 percent, for 3to 6 month it is again 10.5 percent, for more than 6 month but less than 12 month it was 11 percent, if it is more than 1 year but less than 2 year and for 2 year and above it was 11.5 and 12 percent respectively. The lending rate varies depending on the economic activities for the year 1993 and 1994.

Table 4.1.4 Interest Rate Structure in Ethiopia (1993 &1994)

year	1993	1994
A. Deposit Rates		
1. Savings	10.0	10.0
2. Time		
30 days' notice	10.5	10.5
3 months to less than 6 months	10.5	10.5
6 months to less than 12 months	11.0	11.0
1 year to less than 2 years	11.5	11.5
2 years and above	12.0	12.0
B. Lending Rates		
Agriculture	11.0-12.0	11.0-12.0
Industry, Mining, Power and water resource	13.0-14.0	13.0-14.0
Domestic Trade	14.0-15.0	14.0-15.0
Transport and communications	13.0-14.0	13.0-14.0
Export trade	13.0-14.0	13.0-14.0
Import trade	14.0-15.0	14.0-15.0
Hotels and tourism	14.0-15.0	14.0-15.0
Construction	11.0-12.0	11.0-12.0
Housing (1) Purchase	11.0-12.0	11.0-12.0
(2) Construction	11.0-12.0	11.0-12.0
Central Government	12.0-13.0	12.0-13.0
Banks & financial institutions	10.0	11.5
Personal loans	14.0-15.0	14.0-15.0

Source: Ethiopian Economic Association data set (2012)

Starting from 1995 to 2009 the minimum interest rate on time and saving deposit, the maximum lending rate by commercial banks and other financial institutions as well as central government loan varies from time to time. The minimum interest rate on time and saving deposit was 11 percent before it decline to 3 percent in 2006 and 2008.

The maximum lending rate by commercial banks and other financial institutions reaches its maximum in1996 which was 16 percent and it declines to 10.3 percent in 2007. The central government loan does not show more variation over this period. Over this period the interest rate structure in Ethiopia is no more fixed and more or less it is determined by market force.

The average saving deposit rate in 2010 and 2011is 4.63 and 5.38 respectively, and the average time deposit rate is 4.65 and 5.50 both showing an improvement in 2011, but the average lending rate declines by 3.02 percent.

4.1.1.2 Monetary Policy Frameworks in Ethiopia

Monetary Policy Objectives

The principal objective of the monetary policy of the National Bank of Ethiopia is to maintain price & exchange rate stability and support sustainable economic growth of Ethiopia. Price stability is a proxy for macroeconomic stability which is vital in private sector economic decision on investment, consumption, international trade and saving. Finally, macroeconomic stability fosters employment and economic growth. Maintaining exchange rate stability on the other hand is considered as the principal policy objective of NBE so as to be competitive in the international trade and to use exchange rate intervention as policy tools for monetary policy to affect both foreign reserve position and domestic money supply. To achieve these objectives the NBE were using different instruments.

Monetary Policy Instruments

The introduction of a wide range of monetary instruments by central banks engenders competition, efficiency and transparency and broadens financial intermediation in the banking system. It also promotes liquidity management of commercial banks and gradually leads to the development of well-functioning money and financial markets which could serve as catalysts for economic growth and development.

So far, the use of such instruments has been extremely limited in Ethiopia due to the underdevelopment of the money market and the virtual non-existence of a financial market. The financial history of Ethiopian shows that following the nationalization of private banks and other financial institutions in 1974 there were only few government banks operating throughout the country till 1994/95 namely Commercial Bank of Ethiopia, Construction and Housing Bank and Agricultural and Development Bank. During this period the National Bank of Ethiopia conducts its monetary policy by directly controlling monetary variables and prices.

National Bank of Ethiopia can manage the money supply that is conduct monetary policy, in three ways: By changing the monetary base through open market operations,

by changing the monetary base through discount lending, and by changing the money multiplier by changing the required reserve ratio.

1. **Open Market Operations**

Open Market Operation (Sale & purchase of bonds or securities issued by governments) has generally been used by countries as one of the main instruments for the development of money markets. Trading in these instruments liquefies the financial system in particular and the national economy in general and increases financial intermediation among market participants. If the central bank wishes to lower interest rates, it purchases government debt, thereby increasing the amount of cash in circulation or crediting banks' reserve accounts. Open market purchases and sales have permanent affects on the monetary base. In conducting monetary policy Open Market Operation have a number of advantage: it is under the direct and complete control of the central Banks, it can be large or small, it can be easily reversed, and it can be implemented quickly.

The conduct of OMO varies from country to country depending on the legal and institutional setting, the structure of financial system and the stages of development in the securities market of the country. NBE conduct its OMO actively through Treasury bills market to influence the variables like liquidity level and net domestic assets of the banking system and money supply in the economy and monitor whether they are in conformity with the targeted level. In light of this, the NBE will use open market operations (sale and purchase of government securities) as one of its monetary policy instruments.

Issuing of treasury bills and central bank bills are the first step to develop market based monetary instruments in under developed financial market. Bi-monthly treasury bills auction market is introduced in 1994/95 with the intention of financing government budget deficit from non-bank sources, to create a base for the establishment and development of secondary market and to boost the National Bank of Ethiopia's controlling power on money stock as well as interest rate.

In order to allow the public sector participation on competitive basis in Open Market Purchas cut-off price and ceiling on some public enterprise was removed. To increase the private sector participation, the minimum denomination was reduced from Birr 50 thousands to Birr 5 thousands and the interest proceed from the T-bills was exempted from income tax. Since then the market showed a slight improvement in attracting bidders, total demand for bills and volume of sale.

Despite these measures, the market failed to attract private bidders and it was, and still is, dominated by public organization both in number and volume of purchase. This phenomenon is a result of low interest rate in the treasury bills market, which on

average is three-percentage point lower than the minimum deposit rate. For instance the minimum interest rate on time and saving deposit was 3 percent but the rates on treasury bills(weighted) was less than 1 percent. This is due to high competition among liquid banks and other financial institutions making the treasury bills interest rate too small to attract private bidders who prefer depositing in banks rather than participate in the auction. Also the interest rate determined in the Treasury bills auction market in Ethiopia doesn't use to determine other rates in the economy.

Except providing fund for government, the treasury bills market in Ethiopia is not serving most of its objectives. In order to develop secondary market, NBE has allowed inter-bank money market but still it is at rudimentary level largely and ironically because of the treasury bills market, which cast a shadow on it development. The treasury bills market in Ethiopia is inflationary as opposed to its objective as government spends around 60 percent of the fund from the sale of treasury bills on short term financing like paying wages.

As the government financing is rested on few public institutions that participate in the auction, it might not be sustainable and an unexpected withdrawal of one or two bidders from the auction jeopardizes government financing. This is explained best by the January 2000 phenomena when a total of bills worth Birr 1100.0 million, one of the largest supplies, were put on tender but total demand unexpectedly was only Birr 131 million. This is due to the wrong signal from preceding auctions where there is usually excess demand but a withdrawal of a single bidder revealed the extent that the market is domination by few institutions.

2. Reserve Requirements

Monetary policy can be implemented by changing the proportion of total assets that banks must hold in reserve with the central bank. By changing the proportion of total assets to be held as liquid cash, the Central Banks changes the availability of loanable funds. This acts as a change in the money supply. Central banks typically do not change the reserve requirements often because it creates very volatile changes in the money supply due to the lending multiplier.

The NBE uses this instrument to control the liquidity of banks by varying the rate according with the targeted level. The higher Reserve Requirement contracts the liquidity as well as credit expansion power of commercial banks and the opposite will increase liquidity and credit expansion power of banks. The requirement is currently 10 percent of the net deposit and failing to comply with this requirement will be penalized. The national bank of Ethiopia cut the minimum deposit reserve ratio by 500 basis points to 10% from 15% in January, 2012, the Bank also cut the liquid assets to deposits ratio by the same margin to 20 percent from 25 percent previously. The move is aimed to encourage banks to lend money, particularly to the export sector.

Disadvantages of using changes in reserve requirements as a tool for monetary policy is that large change cannot be made quickly and easily since large changes in reserves must be approved by congress. Also, if a bank holds only a small amount of excess reserves and the required reserve ratio is increased, the bank will have to quickly acquire reserves by borrowing, selling securities, or reducing its loans. Each of these three options is costly and disruptive.

3. Discount window lending

Central banks normally offer a discount window, where commercial banks and other depository institutions are able to borrow reserves from the Central Bank to meet temporary shortages of liquidity caused by internal or external disruptions. This creates a stable financial environment where savings and investment can occur, allowing for the growth of the economy as a whole.

The interest rate charged (called the 'discount rate') is usually set below short term inter-bank market rate. Accessing the discount window allows institutions to vary credit conditions (i.e., the amount of money they have to loan out), thereby affecting the money supply. Through the discount window, the central bank can affect the economic environment, and thus unemployment and economic growth.

Since the introduction of discount window facility for commercial banks on March 2001, no more transaction has been made due to the over liquidity of commercial banks. This is because of those banks highly increased saving and time deposit poured over and above the actual loans granted amounts. The internal and external policy trap of the commercial banks and the economy, thin and undeveloped financial market with no more secondary markets and the like limits the effectiveness of monetary policy through discount window.

4.2 Econometric Analysis

4.2.1 Unit-Root Test Result

Prior to utilizing the data in estimating VAR it is imperative to scrutinize the time series properties of each series. All the variables are transformed to logarithmic forms with the intention of minimizing, if not getting rid of, any abnormality and nonlinearity that characterizes macroeconomic data. To begin with, a series of unit-root tests, such as Augmented Dickey-Fuller (ADF, 1981), and Phillips-Perron (PP, 1988) are used to determine the order of integration of each series. The summaries of test result are shown in Table 4.2.1.

Table 4.2.1 Unit-Root Test Results

variables	ADF	5% critical value	lag	PP	5% critical value	Band-width	decisions
GDP	3.678	-2.968	7	8.037	-2.946	18	I(1)
K	-2.589	-3.540	0	-2.508	-3.540	3	I(1)
L	-2.176	-3.540	0	-2.146	-3.540	3	I(1)
EX	2.267	-1.950	0	-1.737	-3.540	3	I(1)
RMS	-3.265	-3.540	0	-3.265	-3.540	3	I(1)
DGDP	-6.468	-3.548	1	-5.962	-3.544	7	I(0)
DK	-5.472	-1.951	0	-5.468	-1.951	1	I(0)
DL	-5.656	-2.948	0	-5.656	-2.948	1	I(0)
DEX	-6.171	-2.948	0	-6.179	-2.948	2	I(0)
DRMS	-5.776	-2.951	1	-7.214	-2.948	6	I(0)

N.B.: 1. Lag length for ADF tests are decided based on Akaike's information criterion (AIC)

2. Maximum Bandwidth for PP tests are decided based on Newey-West (1994)

3. Prefix 'D' stands for first difference operator

The Augmented Dickey-Fuller and Phillips-Perron test statistics as depicted in Table 4.2.1 illustrates that all variables are non - stationary at levels. 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. But the ADF test applied to the same variables in their first difference becomes stationary at the conventional 5% level of significance. The variables are, therefore, integrated of order one ($I \sim I(1)$). A variable, *X*, is said to be integrated of order *d* if it becomes stationary after differencing d times, i.e. $X \sim I(d)$. By the same token, a stationary series is an I(0)variable.

4.2.2 Results of Co-integration Tests

Since all the variables are found non-stationary at levels, it is compulsory to difference them before estimation. Differencing the variables removes any long-run information contained in the variables of interest. However, the theory of co-integration addresses this issue on integrated short-run dynamics with long-run equilibrium. In the presence of co-integration, the valuable long-run relationships can be preserved since estimation will not be spurious, as long as the variables are integrated and co-integrated. The Resorting to error-correction mechanism, which embraces the estimation of the short-run and the long-run models, is the conventional way out to retain the long run information. The step that follows is, therefore, determining the appropriate lag length that yields white noise residuals as estimation of the long-run relationship using the Johansen's estimation technique takes white noise errors granted.

In the Johansen approach, the starting point is to run unrestricted VAR. The first step in this direction is to determine the lag length of the VAR. Hence, the optimal lag length for this study has been determined using the Akaike Information Criterion (AIC), Hannan-Quinn criterion, and Schwarz Bayesian criterion. According to the Akaike Information Criteria, the VAR estimate with the lowest AIC in absolute value is the most efficient one. In addition, the optimal lag length that is obtained from the AIC is also confirmed by the model reduction test. This result is reported in table 4.2.2.

Table 4.2.2: Model Reduction Test for Output Growth Equation

Model	T	p		log-likelihood	SC	HQ	AIC
SYS(2)	35	30	OLS	270.77513	-12.425	-13.298	-13.759
SYS(1)	35	55	OLS	284.69694	-10.681	-12.282	-13.126

Tests of model reduction (please ensure models are nested for test validity)

SYS(1) --> SYS(2): F(25,75) = 0.72405 [0.8163]

Diagnostic Tests

Vector Portmanteau (5): 127.676

Vector AR 1-2 test: F(50,71) = 0.87017 [0.6960]

*Vector Normality test: Chi ^ 2(10) = 25.354 [0.0047]***

Vector hetero test: F(150,51) = 0.86159 [0.7560]

Vector hetero-X test: Chi ^ 2(300) = 337.40 [0.0675]

***denotes rejection of the null hypothesis at 1% level of significance*

As shown in table 4.2.2 the VAR estimates was conducted from lag length two to one. Based on AIC, SC and HQ criterion, the first lag was found to be optimal for the equation. Though the model reduction test ,i.e., model reduction from VAR (2) to VAR (1) or from SYS (1) --> SYS (2), is not rejected based on the overall F test at any level of significance, based on AIC, SC and HQ criterion VAR(1) is the data fitting model .

Since inappropriate lag length misguides our result the second step is to see the diagnostic test that the VAR model passes. Regarding to diagnostic tests, there is no problem of auto correlation and heteroscedasticity, but it indicates vector normality problems. However econometrics theory states that the existence of normality problem does not affect and distort the estimators' BLUE (Best Linear Unbiased

Estimator) and consistency property, because the main purpose of normality tests is for testing hypothesis about the population parameter using confidence interval (Enders, 1995). Therefore the in-existence of vector normality in our model doesn't affect the coefficients and t- values. If the sample size gets larger and larger, we can easily remove the normality problem & the distribution approaches normal.

The unit-root result showed that all the variables contained in the output growth equation are $I(1)$.This permits to conduct the test for co-integration among the variables. The λ_{trace} statistics adjusted for degrees of freedom confirms that the null hypothesis of at most one co-integrating vector is not rejected at 1% significance level indicating the presence of one co-integrating vector. The test is reported in table 4.2.3.

Table 4.2.3: Johansen's Co-integration Test for Output Growth Equation

H0:rank< =	Trace test	Eigen Value	p-value
0	77.836		[0.009] **
1	45.231	0.60606	[0.085]
2	29.713	0.35814	[0.051]
3	14.920	0.34470	[0.060]
4	2.9705	0.28923	[0.085]

*** denotes rejection of the null at 1% level of significance*

To determine the number of co-integrating vectors, r, we can proceed sequentially from r = 0 to r = n-1 until we fail to reject the hypothesis. The result presented in Table 4.2.3 implies that the null of no co-integration is rejected at 1% level of significance while the alternative hypothesis that at least one co-integrating vector is not rejected. This suggests that there exist precisely one co-integrating vector in the estimated model. Hence, we can conclude that there is long-run relationship between the variables which is explained by a linear combination of I(1) variables.

Once the existence of only a unique co-integrating vector is statistically supported, what is relevant for our analysis is the first column of the α-matrix (the matrix of speed of adjustment coefficients) and the first row of the β matrix (long-run coefficients of the variables). Thus, the results of the Johansen's co-integration analysis are presented in table 4.2.4 and table 4.2.5.

Table 4.2.4: Standardized Beta (β) Coefficients

GDP	K	MS	EX	L
1.0000	-0.40568	1.4313	-0.48606	-2.9617
-0.090249	1.0000	2.5477	-1.0026	-5.6218
0.7323	-4.7234	1.0000	2.7665	6.2227
-0.32768	-0.55889	2.0859	1.0000	-5.6232
-10.488	1.1164	3.7985	-0.24223	1.0000

Table 4.2.5: Standardized alpha (α) Coefficients

GDP	-0.27235	0.021007	0.016698	-0.023503	-0.0072202
K	0.67187	-0.011729	0.053328	-0.23361	-0.011700
M2	-0.26071	-0.023297	-0.0072766	-0.10464	-0.0052302
EX	0.32677	0.11118	-0.014603	-0.18363	-0.00048962
L01	-0.015055	-0.0019070	-0.0021975	0.016946	-0.0014861

Since the existence of only a unique co-integrating vector is statistically supported in the Johansen's co-integration test, only the first row of β and the first columon of α in Table 4.2.4 and 4.2.5 respectively are happen to be the relevant entries. The values of α obtained from the Co-integration show the speed of adjustment of the long run parameters towards the steady state and the deviation from long run equilibrium.

It is mandatory to conduct a test for weak exogeneity to identify the variables that are endogenously determined and conditional on others (exogenous) in the VAR model. To do so there is a need to impose zero-restriction on α-coefficients to test which entries of α in the relevant vector are statistically zero. Rejection of weak exogeneity implies that the variables under investigation are endogenous. The result for test of weak exogeneity is presented as follow in table 4.2.6.

Table4.2.6. Tests for Zero Restrictions on α-coefficients

Variables	α-coefficients	LR test of restrictions: Chi ^ 2(1)	p-value	Inference
GDP	-0.27235	5.1517	[0.0232]*	Not Exogenous
K	o.67187	3.1985	[0.0737]	Exogenous
MS	-0.26071	3.4884	[0.0618]	Exogenous
EX	0.32677	1.3191	[0.2507]	Exogenous
L	-0.015055	0.39226	[0.5311]	Exogenous

**denotes rejection of the null hypothesis of weak exogenity at 5% significance level.*

The results, using the likelihood ratio test as shown in table 4.2.6 confirm that only the dependent variable rejects the null at 5% while all the explanatory variables did not reject. Therefore, other than GDP all the explanatory variables are not endogenous to the system.

Once the co-integration rank is determined, we can impose a rank restriction in the co-integration space to obtain a unique relationship. Since GDP is the endogenous variable, we normalize it by conditioning on the remaining variables.

Thus, the relevant single equation model with the estimates of the long-run coefficients can be constructed as:

$$GDP = 0.40568K - 1.4313MS + 0.48606EX + 2.9617L \ldots\ldots\ldots 4.1$$

Single Equation Diagnostic Tests

Vector Portmanteau (5): 127.676

Vector AR 1-2 test: F(50,71) = 0.87017 [0.6960]

*Vector Normality test: Chi ^ 2(10) = 25.354 [0.0047]***

Vector hetero test: F(150,51) = 0.86159 [0.7560]

Vector hetero-X test: Chi ^ 2(300) = 337.40 [0.0675]

***denotes rejection of the null hypothesis at 1% level of significance*

The result of the diagnostic test confirms the adequacy of the model. That is, the null of no serial correlation and homoscedasticity are not rejected at any conventional significant level. The null hypothesis of normality, however, is rejected at 1% level of significance. However econometrics theory states that the existence of normality problem does not affect and distort the estimators' and consistency property, because the main purpose of normality tests is for testing hypothesis about the population parameter using confidence interval (Enders, 1995). Therefore the in-existence of vector normality in our model doesn't affect the coefficients and t-values. If the sample size gets larger and larger, we can easily remove the normality problem & the distribution approaches normal.so the Johansen result still holds.

To determine which variables are uniquely constituting the co-integrating equation [4.1] the significance of the long-run coefficients of the respective variables should be tested. This test can be obtained by imposing restriction on coefficients, which is termed as exclusion test. It helps to determine the relevant or statistically significant variables in the co-integrating equation. The result of the test along with their respective probability values are reported on Table 4.2.7 below.

Table 4.2.7 Test of Zero Restriction on the Long –run Parameters (Beta (β) Coefficients)

Variables	LR test of restrictions: Chi ^ 2(1)	p-value
K	8.3506	[0.0039]**
MS	14.177	[0.0002]**
EX	10.938	[0.0009]**
L	12.844	[0.0003]**

*** denotes rejection of the null of zero coefficient at 1% significance level*

The result shows that all variables which are included as explanatory variables such as capital (gross capital formation), labor force, money supply and export were found to be statistically significant in influencing output growth in Ethiopia in the long run. The sign of the real variables (capital, labor force and export) were found to be as expected positive and significant but the sign of the policy variable (i.e. money supply) was found to be negative and significant.

The sign on the capital variable support the theoretical idea that capital contributes positively to growth of GDP since the coefficient of capital in this long-run growth equation is positive and significant . Again the sign of labor force supports the theoretical idea that labor contributes positively to output growth in labor abundant countries. The finding on the coefficient of labor force is in line with the findings of Netsanet (1997) and Seyoum (1997) as sited in Alemayehu (2007). So the finding is consistence with Solow growth model which states economic growth is the function of capital and labor.

Again the sign of export was as expected positive and significant and this was in line with the theoretical ideas of Kavoussi (1984) and Moschos (1987), which states export expansion raises factor productivity and leads to various benefits, such as more efficient use of resources and adoption of technological innovations, resulting from foreign competition, greater capacity utilization and gains of scale effects associated with large international markets. Also export may represent an increase in the demand for countries output, it reduces foreign exchange constraint and allows increase in intermediate imports, and it may results in enhanced efficiency. This all leads to greater output growth.

However, the sign of the policy variable, money supply was not as expected. It is negative but significant. As the finding indicates a 1 percent increase in real money supply reduces the output growth by 1.4 percent while keeping other factors constant. This finding contradicts the classical theory of money which assumes the income velocity of money is constant and output is fixed at full employment. According to

classical theory in the long run "money does not matter". It does not affect production, consumption, investment or any other real economic behavior i.e. money is neutral in the long run (Bennett T. 1989). But it may be in line with their analysis that any change in money supply will be reflected in price level because, classical theory says that in growing economy the money supply should grow at the same rate as real GDP in order to keep price stable. But, in case of Ethiopia the gap between growth rate of GDP and growth rate of money supply fluctuates from time to time and most of the time the growth rate of money supply is larger than the growth of GDP. According to classical this leads to inflation which in turn leads to deterioration of output growth.

Again the result is in line with the Keynesian views of money supply which indicates the non-neutrality of money. Also it is in line with the monetarist thought that monetary policy could have at least temporarily bad effects on the real output and it may confirm the Friedman sayings of "inflation is always a monetary phenomenon". Monetarists predict that, in the long run, growth in the money supply will be translated strictly into higher prices, even if monetary expansion occurs during a recession. In their view, the long term effect of any monetary growth is a proportional movement of the price level which raises the prospect of inflation (Milton Friedman 1968).

In case of Ethiopia the finding is also in line with the analysis of Alemayehu (2007). In his analysis of "the Political Economy of Growth in Ethiopia" he outlined that the contribution of policies to growth is negative throughout the three periods (Monarchy, Derg and EPRDF), but was at its worst under the Derg regime. According to Alemayehu with the rising inflation monetary action in Ethiopia are towards the containments of inflation rather than output.

Also the finding is in line with the findings of Mishra and Peter Montiel (2012) which states that in developing countries due to fragmentation of financial markets, lack of independent central banks, poor records in managing monetary policy and generally due to under developed financial monetary policy is not conducted well, hence it fails to achieve its desired objectives and in turn resulted in inflationary pressure. It may be in line with the finding of Africa Development Bank (2011) which states in East African countries in spite of good macro performance over the past decade a rise in money supply leads to inflation. This galloping inflation in turn put a constraint on economic growth and exacerbates poverty level in this area.

The under developed financial structure in Ethiopia hinders the effectiveness of the mechanism through which monetary policy affects the aggregate demand. According to the traditional Keynesian view buying securities in open market operation (OMP), reduction in Reserve Requirement (RR) and Deposit Ratio (DR) will increase excess reserve leading to expansion of money supply. However, expansion in money supply

would leads to a fall in real interest rate which in turn lower the cost of capital, and causing a rise in investment spending, there by leading to an increase in aggregate demand and a rise in output (Carl E. Walsh, 2003).

Even if expansionary monetary policies do reduce interest rates a bit, Keynesians believe that saving and investment is relatively insensitive to the interest rate, and so income is affected little by monetary policies. This implies that the interest rate channel is ineffective in transmitting the effect of money supply to output.

The other channel through which monetary policy affects the output level is the asset channel. Arbitrage between long-term bonds on the one hand, and equities and real assets, on the other, affects stock market values and real estate prices, which in turn affect household wealth and consumer spending, constituting the asset channel. However, due to under development of financial market this channel is not well developed in Ethiopia. For example long-term bond starts in Ethiopia in 1994/95.

The other channel through which monetary policy affects the aggregate demand is the exchange rate channel. Arbitrage between assets denominated in domestic and foreign currencies affects the real exchange rate, which alters the composition of both consumption and investment spending between domestic and foreign goods. This constitutes the exchange rate channel. First, during Derg regime the exchange rate was fixed. This affects the foreign reserve requirement. Second the existence of parallel exchange market hinders the effectiveness of this channel.

Again the credit channel is not as effective in Ethiopia. Credit market frictions imply that some borrowers have access to external funds only through bank credit, while others must pay a premium over the risk-free rate that depends on their net worth (the external finance premium). The credit channel captures the dual effects that changes in the supply of banking system reserves exert on aggregate demand through changes in the terms on which bank customers have access to loans (the bank lending channel) as well as through changes in the external finance premium (the balance sheet channel) (Prachi Mishra and Peter Montiel 2012). The existence of informal financial markets such as local money usurers hiders the effectiveness of this channel. In general, the transmission mechanism of monetary policy depends on the exchange rate regime and financial structure of the country. However, in Ethiopia both of them are not well developed yet.

The National Bank of Ethiopia aims at keeping the growth of money supply consistence with the growth of nominal GDP in order to maintain inflation at its lowest level, but the gap between them is fluctuating from time to time. For instance during Derg regime the growth rate of nominal GDP is blow the growth rate of money

supply on average and it accounts -5.906. But this gap reduced since 1992 to 0.089 on average. Since 2002 it rises to 3.307 on average. In general over the study period the gap between the growth rate of nominal GDP and money supply is on average -2.5758. Thus it is possible to say that NBE does not achieve its target objective. So that money supply could be the cause for inflation. In general, it is possible to say growth in Ethiopia is determined by strength and efficiency of institutions and the quality of public policy.

4.2.3 The Short Run Dynamic Model (Vector Error Correction Model)

As we know, determination of the coefficient of short-run dynamics is conducted by estimation of parsimonious VECM after the determination of long-run relationships. It is very important to specify how short run adjustment of macroeconomic variables is took place, and it is a fertile ground for policies analysis & implementation (Harris, 1995).

Therefore, following the VAR model we can specify the short run model as

$$\Delta GDP_t = \sum_{i=1}^{k} \Delta GDP_{t-i} + \sum_{i=0}^{k} \Delta K_{t-i} + \sum_{i=0}^{k} \Delta MS_{t-i} + \sum_{i=0}^{k} \Delta EX_{t-i} + \sum_{i=0}^{k} \Delta L_{t-i} + ECT_{t-1} \ldots 4.2$$

Where: k represents the lag length and ECT-1denotes the error correcting term.

However, the co-integrating rank is defined as

$$GDP - 0.406k + 1.43MS - 0.486EX - 2.96L \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.4.3$$

Following the above specification, a dynamic result is reported in table 4.2.8:

Table 4.2.8 Short Run Dynamics Results

Dependent variable DGDP

	Coefficient	*Std.Error*	*t-value*	*t-prob*	*Part.R ^ 2*
DGDP_1	*1.45161*	*0.3817*	*3.80*	*0.001*	*0.3575*
Constant	*-0.0657841*	*0.02984*	*-2.20*	*0.037*	*0.1575*
DK	*0.199901*	*0.05710*	*3.50*	*0.002*	*0.3204*
DK_1	*0.114440*	*0.06072*	*1.88*	*0.071*	*0.1202*
DMS_1	*-0.633586*	*0.1396*	*-4.54*	*0.000*	*0.4420*
DL	*2.03356*	*0.7847*	*2.59*	*0.015*	*0.2053*
DEX_1	*0.181189*	*0.06674*	*2.71*	*0.012*	*0.2209*
ECT_1	*-0.48506*	*0.4386*	*-3.39*	*0.002*	*0.3060*

Diagnostic Tests

sigma	0.0490082	RSS	0.0624468896
R ^ 2	0.593588	F(7,26) =	5.425 [0.001]**
log-likelihood	58.	DW	1.95
no. of observations	34	no. of parameters	8
mean(DGDP)	0.0447552	var(DGDP)	0.00451924

AR 1-2 test: F(2,24) = 1.8557 [0.1781]

ARCH 1-1 test: F(1,24) =0.0025780 [0.9599]

Normality test: Chi ^ 2(2) = 1.7185 [0.4235]

Hetero test: F(14,11) = 0.56572 [0.8432]

RESET test: F(1,25) = 0.59054 [0.4494]

The various diagnostic test of the model points no problem regarding the regression analysis. That is, there is no an indication of serial autocorrelation as shown by the Breusch Godfrey LM test for serial correlation. The white test for heteroskedasticity also does not reject the null hypothesis of homoskedasticity errors. Moreover, the ARCH test indicates the absence of autoregressive conditional heteroskedasticity errors. Similarly, the general test for misspecification, RESET test does not reject the null hypothesis of no functional misspecification in the estimated equations. And finally, the Jarque Bera test for normality indicates that the null hypothesis of normality distributed error terms is not rejected.

The goodness of fit of the above models (R^2) shows that (59.38%) of the total variation in the dependent variable (DGDP) is explained by the independent variables in the model. In addition, the reported F-statistics rejects the null hypothesis that the coefficients of all explanatory variables are jointly zero. In general, no problem is detected by the diagnostic statistics of the model. The above regression can therefore be used for analysis.

In the short run dynamic output growth equation, presented in Table 4.2.8, the coefficients maintain their signs as in the long run equation. The coefficients are also short run elasticity's. The coefficient of the capital variable in the dynamic output growth equation is positive and significant at 5% level of significance but its lag is not significant at 5% but it is significant at 10%. The coefficient of labor in the short run growth equation maintains its positive and significance coefficient just as in the long run growth equation. This is a signal for the importance of labor for

economic growth in Ethiopia. In short run the first lag of export and money supply is statistically significance at 5% level of significance. The sign of lag of export is positive and but the sign of money supply is negative impaling not current shock but last year shocks in money supply would affects current output growth.

The estimated coefficient of the error correction term is statistically significant at the 5% level of significance and with the appropriate negative sign. This suggests the validity of a long run equilibrium relationship among the variables in the long run growth equation. The estimated coefficient of the error correction term (ECTt-1) is less than one (-0.485) in absolute terms. Statistically, the equilibrium error term is non-zero, suggesting that GDP growth adjusts to changes in Capital, Labor, export and money supply in the same period and also indicates that the system corrects half of its previous period's disequilibrium in almost one year to its equilibrium level following a shock. The ECTt-1 coefficient of -0.485, indicates that the speed of adjustment of GDP to its steady state level following a shock. This coefficient indicates a speed of adjustment of 48.506 percent from actual growth in the previous year to equilibrium rate of economic growth. This implies that in one year the real gross domestic product adjusts itself to the equilibrium by 48.5 percent showing that it takes almost two years for full adjustment.

Impulse-Response Functions

A shock to the i^{th} variable not only directly affects the i^{th} variable but is also transmitted to all of the other endogenous variables through the dynamic (lag) structure of the VAR. An impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables. Impulse responses trace out the responsiveness of the dependent variables in the VAR to shocks to each of the explanatory variables. So, for each variable a unit shock is applied to the error, and the effects upon the VAR system over time are noted. Thus, if there are "n" variables in a system, a total of "n^2" impulse responses could be generated. If the innovations εt are contemporaneously uncorrelated, interpretation of the impulse response is straightforward. The i^{th} innovation on $\varepsilon_{i,t}$ is simply a shock to the i^{th} endogenous variable $y_{i,t}$. Innovations, however, are usually correlated, and may be viewed as having a common component which cannot be associated with a specific variable. In order to interpret the impulses, it is common to apply a transformation to the innovations so that they become uncorrelated. In this study, the cholesky transforming approach which uses the inverse of the cholesky factor of the residual covariance matrix to orthogonalize the impulses was employed. This approach imposes an ordering of the variables in the VAR and attributes all of the effect of any common component to the variable that comes first in the VAR system. One need to bear in

mind, however, that response may change dramatically if the ordering of the variables is changed.

The estimated IRF of output growth due to monetary policy shock is reported in figure 1 in appendix. This figure embraces response of output growth due to shocks in monetary policy (money supply), capital, labor force, export and to GDP itself. Figure 1in appendix shows the responses of GDP, K, L, EX and MS with respect to one standard deviation innovation in GDP. The finding shows that only monetary policy has negative impact on output growth.

Impulse responses for GDP in Figure 1 show that the effect of a one standard deviation shock to MS is negative. As shock occurs to money supply output starts to decline and then starts to rises after 3 years and then stabilizes around 5 year time horizon. Even if the response of output to money supply shock starts to rise after almost 3 years it remains negative. This figure shows that labor and export innovations have a positive effect on GDP and their effect is smooth. They raise GDP in the beginning, and then stabilize. Also the figure shows that one standard deviation shock to GDP and K has a positive effect on GDP.

If a shock occurs to export and capital as illustrated in figure 1 in appendix the GDP starts to rise and stabilized after almost 2 years. But, as a shock occurs to labor force the GDP stabilized around the equilibrium. When a shock occurs to itself it starts to stabilized within almost one and half years.

CHAPTER FIVE

5. CONCLUSION AND POLICY IMPLICATION

5.1 Conclusion

This study investigates the effect of monetary policy on output growth in Ethiopia using restrictive VAR model based on the neo-liberal growth model. In doing so, it utilizes the Johansen Maximum Likelihood Procedure in analyzing the data. The study have investigated the relationship between real GDP and other variables, such as real variables (capital, labor, export) and policy variables (monetary policy), and is conducted using a time series data covering the period 1974/75 to 2010/11.

In order to make the results an efficient estimator the time series property of the variables contained in the equation is addressed through the test for unit root and the result found that all the variables are stationary after first differencing. Also in order to see the long run relationship between the variables the Johansen Maximum Likelihood Co-integration test is conducted and the result confirms the existence of long run relationship between the variables. Therefore, VAR and error correction

models were estimated to assess the impact of monetary policy on output growth in Ethiopia.

The finding shows that all explanatory variables that are included in the regression are significant both in short run and long run. The sign of the real variables such as capital, labor force and export are positive and significance. But, the sign of the policy variable, monetary policy is negative and significance. The sign on the capital variable support the theoretical conclusion that capital contributes positively to growth of GDP since the coefficient of capital in this long-run growth equation is positive and significant. Again the sign of labor force supports the theoretical idea that labor contributes positively to output growth in labor abundant countries. So the finding is consistence with Solow growth model which states economic growth is the function of capital and labor.

Again the sign of export is as expected positive and significant and this confirms the theoretical ideas of Kavoussi (1984) and Moschos (1987) which states export expansion raises factor productivity and leads to various benefits, such as more efficient use of resources and adoption of technological innovations, resulting from foreign competition, greater capacity utilization and gains of scale effects associated with large international markets.

The sign of money supply is negative and significance. This may be due to the classical theory that in the long run change in money supply will be reflected in price level and also it may be due to the monetarist prediction that in long run growth in money supply will be translated strictly in to higher price. The weakness of monetary transimtion mechanism due to under developed financial system hinders the effectiveness of monetary policy and it leads to miss its objectives.

In general the finding confirms some monetary theories and as well contradicts some other theories. For instance it contradicts the classical theory that states money is neutral in the long run. But, the finding is confirms the classical theory that states if the growth rate of money supply is not the same with the growth of real GDP it leads to inflation which in turn leads to deterioration of output growth. Again the study confirms the Keynesian views of money supply which indicates the non-neutrality of money. Also it is consistence with the monetarist thought that monetary policy could have at least temporarily bad effects on the real output and it may confirm the Friedman sayings of “inflation is always a monetary phenomenon”.

Regarding the short run model, VECM estimation of error correction formulation reveals that there is convergence towards equilibrium in the long run and the adjustment is fairly strong (48% per annum).

5.2 Policy Implications

The Ethiopian economic growth shows volatility to vagaries of nature as well to public policies. The economic growth of Ethiopia is so low except for the past five years and the inflation rate is rising from time to time. However, monetary policy as policy instrument is missing its objectives to stabilize price and bring sustainable output growth. In this regard it is interesting to draw some policy implication from the findings of this study.

In order to design and implement good monetary policy, while formulating the policy, factors affecting monetary policy as well as factors affected by it should have to be considered so that, the NBE should have to take in to account growth of GDP, inflation, domestic credit and net foreign asset. Again the bank should have to pay attention to the transimtion mechanisms through which the monetary policy affects the aggregate demand. Especially since the country is on the plan of transformation from agrarian to industrial they should have to focus on interest and credit channel to encourage investment. Also, they have to do more on exchange rate channel in order to encourage the countries competitiveness in international trade.

Policies that improve financial infrastructure should be drawn. For instance deepening the financial sector liberalization to enhance competition in the banking sector, and financial sector allow transparency and public confidence in the financial system, strengthening supervision of the financial institutions, widening the geographic coverage monetization, and maintain the autonomy of the banks, so that, the financial market will be improved and hence the effectiveness of monetary policy is encouraged. Government should have to take appropriate action on anybody which is participating in informal financial markets and black markets since it is one obstacle for the effectiveness of monetary policy.

The aim of NBE is to maintain the growth rate of money supply consistence with that of the growth of GDP to maintain inflation at its lowest level. But the gap between growth of money supply and GDP is fluctuating every year. This is another major problem hindering the effectiveness of monetary policy in Ethiopia. In order to solve this problem the monetary authorities should have to control the money supplies appropriately, especially the base money. For instance, printing money in order to overcome the problem of budget deficit will leads to inflationary pressure. So that National Bank has to continue to pursue policies of reducing budget deficits monetization to control inflation rate where there is monetary implication of inflation.

In order to make monetary policy effective, policy makers need to ascertain the liquidity needs of the economy and thereby create greater certainty in the amount of credit and money to be supplied to achieve macroeconomic objectives. Furthermore, monetary authorities should be transparent to the public about their policy objectives

and should do to their level best to win credibility among the public that they truly pursue the predefined objectives. This helps to harness expectations of the public and thereby ensure macroeconomic stability. For sustained economic growth, policy makers should make sure that monetary actions do not adversely affect exports and private investment.

Export has been found to be significantly positively affecting GDP in the long run. So encouraging national competitiveness promotion strategy should be among the top priority strategies of the government in order to ensure the long term growth of the nation. Government, therefore, need to do to its level best to solve supply-side constraints, build national productive capacity and develop an efficient trading and transport infrastructure. Diversifying the export basket, sustaining higher rates of export growth over time, upgrading the technological and skill content of export activity are some among the core activities to promote national competitiveness. To diversify the export basket, beyond the multi-pronged activities government should create favorable conditions to scale up small and medium size enterprises, deliberate focus should be made to enhance the export competitiveness of the same enterprises through possible link-ups to international trade and investment linkages.

In line with the finding the following are some suggestible area for further study for any party who is interested in it.

- Assessing the impact of monetary policy on inflation
- Investigating the transmission mechanisms of monetary policy in Ethiopia

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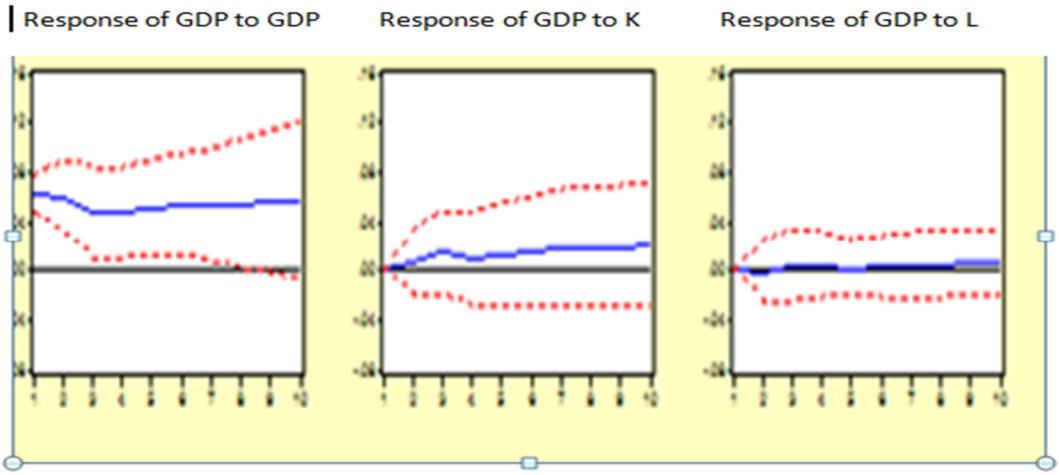
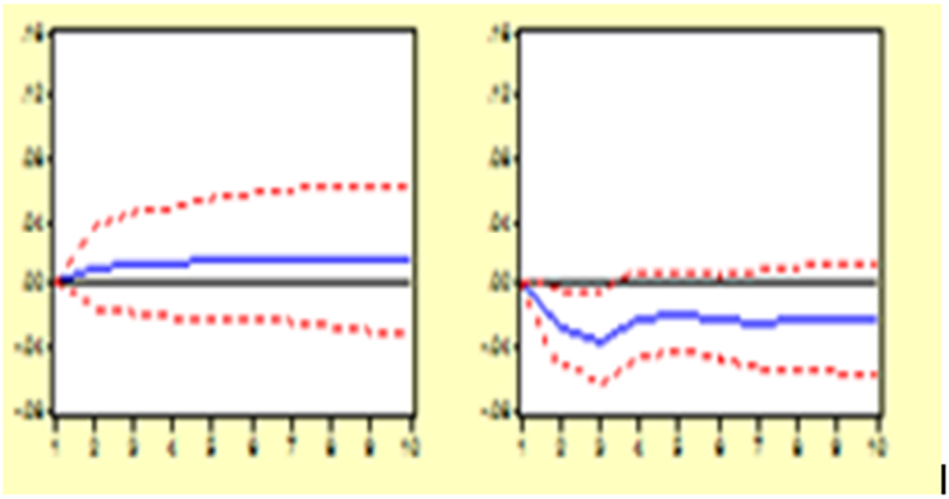
Appendix

Figure 1 impulse response function



Response of GDP to EX

Response of GDP to MS



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A Special Need Assessment Survey of Elders, People with Disability and Vulnerable Group in Benshangul Gumuz region, Western Ethiopia

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Abstract

Benishangul Gumuz is a developing region of Ethiopia; Communities are remote primarily because of underdeveloped infra-structure. Elders and People with Disabilities suffer from this geographic remoteness and are often excluded from social change. For people with disabilities this pattern is the result of lifetime effects and corresponding changes in the composition of the household. The Objective of the study is to carry out the baseline survey about the education, health, economic and social status of Vulnerable Elders and Persons with Disabilities in Benishangul Gumuz regional state. The result of the study shows that out of 534, 188 (35.2 percent) of the peoples were from Assosa zone, 170 (31.8 percent) were from Metekel and the rest were from Kamash Zone. The result shows that 277 (51.9 percent) were people with disability and 257 (48.1 percent) were elders. The findings indicate that of those who reported a disability, the majority (64.7 percent) were suffering from a physical impairment. Approximately 18 percent of disabled reported avisual impairment and 11.3 percent experienced both hearing and speech difficulties. From the result of the baseline survey about 23.1 percent and 19.4 percent of the respondent needs wheel chair and standing frames respectively. Around 17.5 percent of people with disability need other devises, and the remaining respondent needs other devise like spectacles (16.3 percent), walking sticks (13.8 percent), hearing tools (9.4 percent) and the others. The baseline study shows that about 47.4 percent of the respondents were getting sick sometimes. While 13.4 percent of the respondents were very healthy, about 34.1 percent of them were often sick. Also about 4.5 percent of the respondents were suffering from chronically illness. The majority of the respondents which accounts around 65 percent always visit health center for medical care. The remaining 35 percent of the respondents were not visiting health centers for different reasons. Based on this finding we recommended that Quantitative evaluations on the impact of the TLGHLM programs on the lives of disabled and elder people are important. There is however a need to devise qualitative tools for evaluating the impact of programs such as the most significant change tool that is being used.

1. Introduction

1.1. Background

More than ever before, producing internationally comparable disability statistics or database has now become very important. Such information or data is regarded as necessary not only to demonstrate the disadvantageous conditions of People with Disabilities in regard to welfare, but also to produce data which is useful for monitoring achievements on international development commitments.

Many countries throughout the world have, in recent years, adopted policies aiming to promote the rights of people with disabilities to full and equal participation in society. This has often been in response to the ILO Convention No. 159 concerning Vocational Rehabilitation and Employment of Disabled Persons (1983). Policy on employment opportunities for people with disabilities is frequently supported by legislation and implementation strategies as essential tools to promote integration and social inclusion.

Some countries in Africa have made progress in introducing disability-related legislation, but many of these laws have not yet been implemented. In other African countries, existing national laws need to be reviewed in order to achieve equalization of opportunities for persons with disabilities. Improving legislation and implementation strategies has been identified as one of the main issues to be tackled in the African Decade of Disabled Persons 1999-2009.

According to the Population and Housing Census of 1994, of a total population of 53,477,265 there were 988,849 people with disabilities in Ethiopia (1.85 percent of the population). The 1994 Census is acknowledged to have underestimated the number of disabled persons in the country. In 2003, it is estimated that there are over 5 million children, adults and elderly persons with disabilities in Ethiopia, representing 7.6 per cent of the population.

According to a recent survey on disability in Ethiopia, 60per cent of persons with disabilities in Ethiopia were unemployed in 1995, of which two-thirds were self-employed in rural areas in occupations such as agriculture, animal husbandry or forest activities. None of the disabled people surveyed were reported to be employed in administration or management positions.

Benishangul Gumuz is a developing region of Ethiopia; Communities are remote primarily because of underdeveloped infra-structure. Elders and People with Disabilities suffer from this geographic remoteness and are often excluded from social change. In Benishangul Gumuz despite attitudes of traditional respect, Associations for Elders and People with Disabilities lack capacity. Elders and People with Disabilities often experience poverty, social exclusion, prejudice and discrimination.

Social and Community support is often limited by underdeveloped community infrastructure**.**

Benishangul Gumuz has also a diverse population in terms of region; it is one of the four emerging regions. 85% live in rural areas; the population is currently 970,847 and has an indigenous population of five ethnic groups, Gumuz, Berta, Shinasha, Mao and Komo as well as Amhara, Oromo, Agew Awi and Tigre. Although the elderly represented 3% of the population, less than half reach 65 years of age, with the remaining life expectancy at 65 years ranging from 15 years in rural areas to 19 years in urban areas. Rural residence, illiteracy and widowhood are associated with lower survival rates. Literacy rates tend to be low because older people in rural areas did not have access to education as children. The age and or disability of the household head is a significant demographic correlate of poverty. For people with disabilities this pattern is the result of lifetime effects and corresponding changes in the composition of the household. Many older people are supporting grandchildren whose parents have died as a result of HIV infection. Once older people and people with disabilities are exposed to poverty, it is much more difficult for them to come out of it. Health problems, lack of balanced diet, shelter, unsuitable residence, sometimes the absence of family and community support, absence of social welfare coverage, limited social security services,, absence and exclusion from education and training opportunities, limited employment and income generating opportunities are some of the factors contributing to the poverty and social exclusion of both elders and people with disabilities. HIV/AIDS has further complicated the problems of older persons and people with disabilities. Whilst Older persons are being left without support as well as bringing up their grandchildren, people with disabilities who become HIV positive or whose disability is associated with aids may suffer from “double “stigma because of their disability and HIV status.

Opportunities now exist to improve this situation. Currently the National Plan of Action on older persons (1998 - 2007 Ethiopian Calendar) prepared by Ministry of Labour and Social Affairs (MOLSA) provides opportunities to link activity designed to improve the status of both older people and people with disabilities to encourage more active participation at a Zone, Woreda and Kebele level. The Growth and Transformation Plan includes reference to both groups as part of the countries development. One of the main goals of the plan is to enhance the capacity of the community to identify the nature of the problems elderly people and people with disabilities are facing thus creating favorable condition for these two groups to engage themselves in productive activities.

Older Peoples Associations and Associations for People with Disabilities have been established by the Benishangul Gumuz Bureau of Labour and Social Affairs (BLOSA) as independent bodies both at a Regional and Woreda level and but these often lack

capacity at a Woreda and Kebele level. Additional opportunities for the sustainability of this program's outcomes have been created by the adoption of the Community Care Coalition (CCC) model piloted in Tigray with the support of UNICEF.

Additionally, the Ethiopia Elderly and Pensioners National Association (EEPNA) have been established by older Ethiopians from older people's associations who were unhappy with the marginalisation of older people in the country. Currently, EEPNA is the only institution of its kind that represents grassroots older people's associations. For people with Disabilities this role is held by The Federation of National Associations for People with Disabilities (FENAPD) it envisages all persons with disabilities will participate equally in development.

By linking associations with EEPNA and FENAPD and celebrating 21st September, the UN International Day of Older Persons and December 3rd, the International Day of Persons with Disabilities .Sustainability and links to the MOLSA policy agenda will be increased and isolation and geographic exclusion decreased.

Developing a baseline study to ensure the actual lives of elders and people with disabilities in each targeted Woreda are identified and statistics become a reality in the reflection of people's lives through case studies. At the exit stage baseline information and illustrative material of the lives of Elders and People with Disability can inform further developments including the implementation of BOLSA led future strategies.

1.2. Justification of the survey

Undoubtedly, more concerted and effective interventions are required to advance the status of persons with disabilities in Ethiopia and improve their lives. Without appropriate information on the causes, incidence and prevalence of disability, and on the conditions of persons with disabilities, actors are hardly able to design effective strategies and galvanize stakeholders' concerted involvement in disability issues.

The more the number of persons with disabilities, the more disability issue will form part of development agenda. So is the more attention the issue gets on the part of stakeholders. Availability of appropriate disability data should thus be considered part of the effort to address the conditions of persons with disabilities. Development actors and other stakeholders need disability information or data for various reasons.

Those who need the information may include: Researchers, The general public, Policy makers, Associations and NGO's, Trade unions, Government agencies, International organizations, Health service organizations and providers, Industries, Device and equipment manufacturers, Employers, Disability consumer groups, Insurance agencies, Education planners and Media agencies

And, reasons why they need the information are among others for: Planning, Project and planning evaluation, Marketing, Policy development, Advocacy and political action, Prevention, Tracking and enhancing participation, Improving services and Creating or improving standards

It is thus no wonder that various international and regional instruments on disability and elders increasingly stress the importance of appropriate disability information or valid disability database, and call for development actors to act towards this. Examples of such instruments at the international level include: World Programme of Action Concerning Disabled Persons (1982), and the Standard Rules on the Equalization of Opportunities for Persons with Disabilities (1993). At regional level, the Continental Plan of Action for the African Decade of Persons with Disabilities (2002) reinforces the international call, interalia, by emphasizing in Article 42(g) the need to "establish a database or databases, compiling disability-related information of different kinds".

More than ever before, producing internationally comparable disability statistics or database has now become very important. Such information or data is regarded as necessary not only to demonstrate the disadvantageous conditions of People with Disabilities in regard to welfare, but also to produce data which is useful for monitoring achievements on international development commitments.

1.3 Objective of the baseline study

The Overall Objective of the study is to carry out the baseline survey about the education, health, economic and social status of Vulnerable Elders and Persons with Disabilities in Benishangul Gumuz regional state.

The Specific Objectives:

- ☞ To know the area of intervention to enhance the implementing capacities of intermediary, local partner organization and the participants.
- ☞ To know the special needs of the peoples to improve the economic situation and enhance income of 120 elder, 120 persons with disabilities and 180 highly vulnerable elders and highly vulnerable person with disabilities so they are economically sustained.
- ☞ To have a baseline survey which help to create a conducive social environment for 300 elders and 300 people with disabilities

1.4 Significance of the study

1 Ensuring that elderly people and people with disabilities themselves are involved in all aspects of the program delivery by building the capacity of the Associations with an emphasis on overcoming stigma and discrimination. This will ensure at a

local level that at the exit of the program elders and people with disabilities are involved in the associations and can be directly consulted and involved in the ongoing implementation of the Growth and Transformation Plan, National and Regional Plans including the development of the emerging Community Care Coalition.

2 Overcoming practical barriers which prevent social inclusion through, income generation activities, access to credit, inclusion in vocational education, and services of trained volunteer care givers. It is planned that at an exit stage these IGAs will be self-sustaining through the development of economically viable income generation projects, and practical interventions to ensure barriers to participation are overcome.

3 Increased capacity at Woreda level to deliver government action plan and link to policy developments. At an exit stage these will serve as an ongoing facility to ensure community involvement with developments initiated by BOLSA.

4 Conditions shall be facilitated that will enable persons with disabilities to use their abilities as individuals or in association with others to contribute to the development of society as well as to be self-supporting by participating in the political, economic and social activities of the country.

5 Efforts that instill a sense of confidence and self-reliance within persons with disabilities through education, skillful training, gainful employment opportunities, and other services shall be increased and appropriate legislative measures be taken to ensure their welfare.

2. Overview of Disability Statistics

2.1. Need and Importance of Disability and Elders Data

As noted before, international and regional instruments on disability stress the importance of having sound disability statistics and valid disability database. At the national level, the National Statistical Development Strategy (2009/10 - 2013/14) of the Ethiopian Central Statistical Authority (CSA) acknowledges the need for maintaining a comprehensive data on persons with disabilities in the country. There are many reasons why the above stated instruments and documents acknowledged the need and importance of disability statistics or valid disability database.

Just as any quality statistical information or data, quality disability information is needed for service programming and development, capacity building, budgeting, and seeking international assistance, among many others. Specifically, appropriate disability statistics or data is important for the following three reasons: monitoring the

level of functioning in a population; for provision of services and equalization of opportunity.

Monitoring the level of Functioning in Population Monitoring functioning levels in a population is important for two purposes. First, it helps to understand the prevalence of disability. Second, it helps in evaluating the success of disability interventions.

Prevalence of disability correlates with how high priority disability issues should receive in the country's development agenda. The more persons with disabilities, the more important disability issue will be. By the same token, the more persons who are living with particular disability types, the more important disability issues that particular disability type will be. Collecting data on prevalence of disability in general, on the prevalence of a particular type of disability, will enable development actors to measure how many persons with disabilities could benefit from, for example, special needs education program. Measuring the impact of preventive programs such education programs to prevent traffic accidents requires data on the magnitude of disability caused by traffic accident before program intervention commences.

Provision of Services

Another important importance of disability information or data is to design and implement programs aimed at providing services to persons with disabilities. Two types of services can be envisaged here main stream and disability specific services. The former refers to services made available to the general public, and appropriate disability data provides the relevant information to accommodate persons with disabilities in the provision of mainstream services. The latter refers to specific services targeted at persons with disabilities in general, or targeted at persons with a specific disability types in particular (e.g. providing prosthetic devices and the associated rehabilitation services). Organizations planning to design service delivery programs would need detailed information on peoples' functioning levels, the supports that people have available to them within their family and within their community, and environmental characteristics. More specifically, in order to design a program for persons with vision problems detailed information is needed on how many people are blind as opposed to how many people had some limited vision they could utilize, and how many had problems that were correctable by glasses.

If an organization plan is to design an on-site program, it needs to have information, among others, on the target beneficiaries' ability to travel to the center to receive services. Their ability to travel, of course, would be a function of the extent of their vision problems, the presence of other functional limitations, the accessibility of transportation systems, and the resources (monetary and non-monetary) that they could employ. And an extensive household survey or administrative database that is

designed with an idea in mind of what services are going to be delivered provides the required information or data.

Equalization of Opportunities

Another importance of disability information or data is to assess the impact of having a limitation on individuals and their families. The goal of inclusive development is to enable all people to have equal opportunities for participating in the economic and social lives of their communities. Appropriate disability information or data how inclusive a society is in respect to persons with disabilities. Such information is also important to monitor progresses made in ensuring equal participation of persons with disabilities in the all aspects of the society.

2.2. Conceptions, Definitions and Classifications of Disability

Conceptions of Disability

Disability is a relative and dynamic concept. It is a relative concept because it is differently understood according to cultures, attitudes and prevailing social norms. Notwithstanding, the need to have a framework for understanding and analyzing disability at global level was felt decades ago and efforts made towards this have produced different frameworks or models of understanding. Identified models of disability are: the medical model, the social model and the bio-psychosocial model. Each model is brought forward and took prominence at one stage in the global disability movement. And each has influenced the contemporary framework for understanding disability, which is the bio-psychosocial model.

As conceptual and definitional issues are fundamental issues raised in connection with international comparability of disability information generated by different information or data producers, it is thus essential that the models of disability are now explained. The models are: the medical model, the social model and the bio-psychosocial model.

The medical model is a traditionally held view which regards disability as an individual person's medical condition in need of cure, rehabilitation and adaptation to society. Under this model, focus is placed on the person's limitations to do daily activities within the home, such as ability to walk or ability to dress oneself; as such enabling persons with disabilities do the stated activities is equated with making them reach their maximum potential.

In contrast to the medical model, the social model of disability underscores inclusion or participation of persons with disabilities in society. It considers environmental or social factors as reasons for persons with disabilities' exclusion or marginalization in society. According to this model, the barrier for persons with disabilities participation

in society is the society in which they live. The society does not provide for the needs of persons with disabilities (inaccessible buildings, no brail books, no sign language interpreter, etc.) and thus disables the person by not allowing for their inclusion. The challenge is for the society to adjust or to accommodate People with disabilities.

Definitions of Disability

While definitions of disability that can be drawn from each model of disability differ in meaning and scope, ICF views disability as "...the umbrella term for any or all of an impairment of body structure or function, a limitation of activities, or a restriction in participation"

In practice, data producers across and within countries adopt different definitions of disability and often not in line with the ICF framework or the bio-psychosocial model of understanding disability. Different definitions imply different tools, measurements and methods for data collection. Disability information or data generated as such will produce different disability prevalence figures and obviously lacks international comparability.

Definition of disability data producers across the globe follow is not uniform, selected definitions taken from few international instruments can show how closely or remotely a given definition reflect the contemporary understanding of disability. Three selected definitions are provided below:

The UN Standard Rules on the Equalization of Opportunities provides a definition of disability by stating that disability: "Summarizes a great number of different functional limitations occurring in any population in any country of the world. People may be disabled by physical, intellectual or sensory impairment, medical conditions or mental illness. Such impairments, conditions or illnesses may be permanent or transitory in nature"

The United Nations, in providing recommendations for the conduct of national censuses defines a person with disability as:

A person who is limited in the kind or amount of activities that he or she can do because of ongoing difficulties due to a long-term physical condition, mental condition or health problem (United Nations, 1998).

The Convention on the Rights and Dignity of Persons with Disabilities states that:

"...disability is an evolving concept and that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others

The Convention further provides that:

"Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others."

Of the three selected definitions provided above, it is clear that the definition provided by the CRDP reflect the bio-psychosocial model of understanding disability both in terms of meaning and language.

Classification

As noted before, development in conceptualization of disability from the medical model to the biopsychosocial model has brought about a complex set of dimensions that need to be considered in explaining disability.

Based on the bio-psychosocial model, three domains of human functioning are classified by ICF: functioning at the level of body or body part, the whole person, and the whole person in a social context. Disability therefore involves dysfunctioning at one or more of these same levels: impairments, activity limitations and participation restrictions.

Notwithstanding its complexity classification of disability into three domains by ICF underlies much of the efforts to obtain national and international data sets in the disability field.

3. Description of Study Area

Benshangul Gumuz region is one of the administrative region which is found in western part of Ethiopia. The region is bordered by Sudan in west, Oromya regional state in East, Gambela regional state in South, and Amhara regional state in the North. Benshangul Gumuz region has three Zones namely Assosa, Metekel and Kamashi. TLGHLM project is implemented in two wordas from each zone. This wordas were Assosa and Bambasi from Assosa Zone, Pawi and Dangur from Metekel zone and Agallometi and Kamashi from Kamashi Zone.

The program is designed to enhance the lives of two groups, people with disabilities and elders. These two socially excluded groups have been included in the same program because of their links in terms of policy development to the Ministry of Labour and Social Affairs (MOLSA) and the Regional government, BOLSA, at a structural level. Whilst aware that the end beneficiary needs are different many of the issues are the same. The program is there for designed to overcome prejudice and encourage community participation and income generation.

Associations for people with Disabilities have been established in Assosa and Kamash and assistance will be given for their establishment in Metekel zone. Both Elders and

Associations for Disabled people are legally constituted organisations registered by the Benishangul Gumuz Justice Department.

Elders: The age range of Elders is 60 – 100 plus, from all ethnic groups, It is envisaged that elders aged 60 -80 will be the primary group for this program which encourages self-help and community participation. It is envisaged that 3% of the population are over 60 years of age. This percentage will be reflected in the target Woredas and Kebeles. Literacy rates are low amongst the elder population because of the recentness of the increase in literacy in Benishangul Gumuz and because they are still lower in rural areas than urban.

People with Disabilities: Using figures obtained from the Regional Bureau of Labour and Social Affairs it is estimated that there are women and 4,621 people with disabilities in the region.

The program areas have a majority of Gumuz people and will encompass all ethnic groups in these areas. People with Disabilities have often experienced social exclusion from school and vocational training. Specific attention will be given to the inclusion of women from both groups by "recruitment" through the household surveys.

3.1 Research Approach

Both qualitative and quantitative methods were employed to generate the benchmarks for the interventions and necessary actions for which this study was undertaken.

3.1.1 Quantitative Method

Quantitative research methodology was used to generate data on the status of people with disability and elders regarding demographic characteristics, educational status and socio-economics statues of the respondents. The selected respondents were thus probed through quantitative research instruments known as questionnaires. This design aimed at investigating the following:

The types of disability and its cause, Human and material resources that required for formal and non-formal education of peoples with disabilities in the selected woredas. Again it investigates special needs (including both material and financial) of this target group.

The causes of the dropout rate for male and female with different ages and disabilities, the different roles played by parents, guardians, caretakers, school management and community leaders in promoting education of people with disability and material needs for them.

The survey was designed to investigating the Social and Economic Characteristics of peoples with disability and elders. Under this first we investigate the Characteristics of

People with Disability including types of disability, cause of disability, performance of daily activities, assistive dives in need and types of this dives.

Second the aim is to investigate the educational background of the respondents including the level of educational, there school status, reason for dropping and types of educational support. Also it aims to investigate the health condition of the respondents including types of chronically illness, frequency of illness and frequency of visiting health center.

It also investigates, the Social and Living Condition of Respondents including place of living, roommate, family's treatment, status of society's treatment, participation in social committee and factors hindering their participation, statues of the house and factor hindering its construction, clothing of the respondents and cloth aid.

Finally it investigates the economic statues of the respondents basically focusing on the job that different peoples with disability and elders involved, annual income they generate from the job, sufficiency of the income for living, additional source of income, reasons for having no job, the source of income for those who have no income, saving and factors hindering saving, interest to participate in any job, support they need, frequency of feeding, statues of feeding and types of social discrimination.

Individual interviews and conversations

Using the questionnaires, individual interviews and conversations were held with: people with different types of disabilities and elders included in the project. Some of the questions were open ended and allowed open responses from the respondents. A total of 534 respondents/individuals were interviewed.

3.1.2. Qualitative Method s

Some different qualitative methods were used in this study to explore the Socio-economic condition of the disabled, and elders and the complex forms of deprivation in different settings.

3.2 The data

The data used in this baseline study are obtained from primary sources. This section outlines the methods we used in gathering information and collecting of data about extremely elders and disabled project participants. We then describe the context and background of these study participants. In this baseline study a purposive sampling techniques is adopted and obtained information by face to face interview method. A total of 600 respondents were interviewed. Out of which 300 elders and 300 disable persons.

From each woreda 100 peoples with disability and elders were included in the project. There for, the total populations of the study were 600 peoples. Among these 600 peoples with disability and elders 534 were our respondents in which 188 from Assosa

zone, 170 from metekel zone and the remaining 176 were from Kamashi zone. The study includes peoples with disability and elders in each of the six woreda which are included in the project.

We recruited 3 teams of enumerators, one teams for TLHLM, one teams for volunteers and the other one is Assosa university lecturers' teams. The survey questionnaire was translated into local languages (i.e means the questionnaire was translated from English to Amharic). The four-day training course took place in Benishangul Gumuz regional state, Assosa town, Training course including questionnaire explanation, translation, testing, field procedures and Pre-test for team members and volunteers. The survey teams were supervised by TLHLM and Assosa university lecturer.

3.3 Method of data analysis

After collecting the data and cleaning (editing and coding), it is necessary to analyze it. Data analysis is an extract of information from the given data. In analyzing data, descriptive analyses were being employed. Descriptive statistics are utilized to look for the patterns of the data set, to summarize and present that information in a convenient form. It describes the data collected through charts, frequency distribution (tables), statistical graphs such as pie-charts, histogram, bar-charts and so on.

The purpose of this method is to analyze the different socio-economic, demographic and health factors of elders and disable persons in the selected woredas. The data are analyzed using the Statistical Package for Social Sciences (SPSS) version 20.

4. Data Analysis and Presentation

The quantitative data from the study was analyzed using Microsoft Excel and SPSS. Summary
statistics from this analysis are presented below, along with findings from the qualitative life
histories and individual interviews. The first section summaries the individual basic and demographic information on the disabled and elder individuals, and includes the status, sex and age distribution of the individuals, marital status, and family size. The second focuses on **socio- economic characteristics of the elders and people with disability including** nature and causes of the disability, educational background, health and living condition and the Economic status of the respondents. Also it focuses on challenges and problems encountered by people with disabilities, including discrimination in different settings and gaps in service delivery. In some cases it was not possible to collect information from a disabled participant directly because of communication problems associated with the particular disability. In these cases researchers relied on information provided by caregivers.

4.1 Basic and Demographic Information on People with Disability and Elders

This section provides a demographic and background description of the elders and disabled people who were interviewed. Relevant comparisons were also drawn based on age group, sex, marital status and family size across woreda and zones.

Table 1: Distribution of people with disability and elders by Zone and Woreda

Zone	Woreda						Total
	Assosa	Bambasi	Dangur	Pawi	Kamashi	Agallometi	
Assosa	88(46.8%)	100(53.2 %)					188
Metekel			82(48.2%)	88(51.8%)			170
Kamash					86(48.9%)	90 (51.1%)	176
Total	88(16.5%)	100 (18.7%)	82(15.4%)	88(16.5%)	86(16.1%)	90 (16.9%)	534

A data on the total of 534 people with disability and elders were collected from three zones and six woredas during the survey. Out of 534, 188 (35.2 percent) of the peoples were from Assosa zone, 170 (31.8 percent) were from Metekel and the rest were from Kamash Zone. When we look its distribution across woreda the largest proportion were from Bambasi which accounts about 100 peoples (18.7 percent), followed by Agallometi 90 (16.9 percent) and powi 88 (16.5 percent) and Assosa 88 (16.5 percent) respectively. Kamashi woreda with 86 respondents (16.1 percent) and Dangur woreda with 82 respondents (15.4 percent) share the lowest proportion.

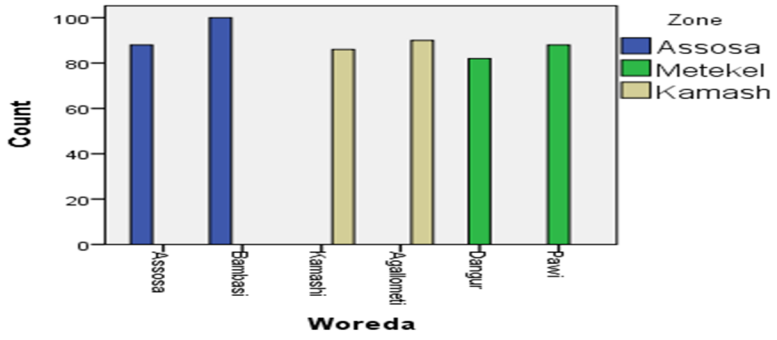

Fig 1 Distribution of Respondents by Zone and Woreda

4.1.1 Status of the Respondent

This section presents the status of the respondents based on their physical fitness. When we look the distribution of the respondents according to their status it was almost balance. From the total respondent of 534, 277 (51.9 percent) were people with disability and 257 (48.1 percent) were elders.

Table 2: Status of the respondent

		Number	Percent
	Elder	257	48.1
	Disabled	277	51.9
	Total	534	100.0

The finding shows that, the distribution of the respondents according to their physical status varies from woreda to woreda. Here below table 3 shows its distribution across woreda.

Table 3 Status of respondent by Woreda

			Status of the respondent		Total
			Elder	Disabled	
Woredas	Assosa	Count	45	43	88
		% within Woreda	51.1%	48.9%	100.0%
		% of Total	8.4%	8.1%	16.5%
	Bambasi	Count	49	51	100
		% within Woreda	49.0%	51.0%	100.0%
		% of Total	9.2%	9.6%	18.7%
	Kamashi	Count	39	47	86
		% within Woreda	45.3%	54.7%	100.0%
		% of Total	7.3%	8.8%	16.1%
	Agallometi	Count	43	47	90
		% within Woreda	47.8%	52.2%	100.0%
		% of Total	8.1%	8.8%	16.9%
	Dangur	Count	37	45	82
		% within Woreda	45.1%	54.9%	100.0%
		% of Total	6.9%	8.4%	15.4%
	Pawi	Count	44	44	88
		% within Woreda	50.0%	50.0%	100.0%
		% of Total	8.2%	8.2%	16.5%
Total		Count	257	277	534
		% within Woreda	48.1%	51.9%	100.0%
		% of Total	48.1%	51.9%	100.0%

Among the total respondents of Assosa woreda 45 (51.1 percent) were elders and the remaining 43 were people with disability. This accounts about 8.4 percent and 8.1 percent of the total respondents respectively. When we look the data of Bambasi, people with disability (51percent) accounts the largest proportion of the respondent of the woreda. This woreda shares the largest proportion of elders and people with disability among all the woredas, which accounts about 9.2 percent and 9.6 percent of the total respondents of elders and people with disability respectively.

People with disability share the largest proportion in both woredas of Kamash Zone, accounting about 8.8 present of all the respondents of people. But elders are large in number in Agallometi than Kamashi, which were 47.8 percent of the total respondent of the woreda. Even if the numbers of elder and disabled respondent are equal in Pawi, the larger proportions of the respondents of Dangur were people with disability accounting about 54.9 percent of the total respondent of the woreda and 8.4 percent of the total respondent.

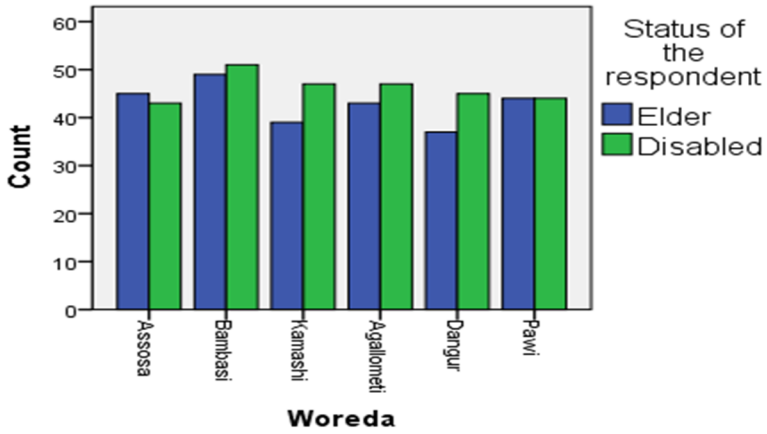

Fig 2 Status of the Respondents by Woreda

4.1.2 **Sex Distribution**

Out of the total 534 respondents 277, which accounts about 51.9 percent were male and the remaining 257 were females. When we look the sex distribution of respondents across woredas, the large proportion of male respondents were found in Bambasi accounting about 11.4 percent of all the total respondent followed be Assosa woreda which accounts about 10.1 percent of the total respondent. But Kamashi and Pawi woreda took the larger proportion of female respondents which accounts about 9.9 percent and 9.2 percent of the total respondent respectively.

Table 4: Sex distribution of Respondents

Woreda		Sex		Total
		Male	Female	
	Assosa	54(10.1%)	34(6.4%)	88(16.5%)
	Bambasi	61(11.4%)	39(7.3%)	100(18.7%)
	Kamashi	33(6.2%)	53(9.9%)	86(16.1%)
	Agallometi	50 (9.4%)	40(7.5%)	90(16.9%)
	Dangur	40(7.5%)	42(7.9%)	82(15.4%)
	Pawi	39(7.3%)	49(9.2%)	88(16.5%)
Total		277(51.9%)	257(48.1%)	534(100%)

Among the 277 males 120 of them were elders and the remaining 157 were people with disability. But the larger proportions of females were elders accounting about 137 of the total female respondents, while the remaining 120 were disabled peoples.

Table 5 Sex distribution by status of the respondents

			Sex		Total
			Male	Female	
Status of the respondent	Elder	Count	120	137	257
		% of Total	22.5%	25.7%	48.1%
	Disabled	Count	157	120	277
		% of Total	29.4%	22.5%	51.9%
Total		Count	277	257	534
		% of Total	51.9%	48.1%	100.0%

4.1.3 Age Distribution

The finding of the survey showed that the largest proportion of the respondent lice in the age group of above 64, followed by the age group of young and youth. The finding shows that larger proportion of the respondent lies in the working age group accounting about 52.6 percent of the total respondent. But most of them are not providing labor to the market because of many factors.

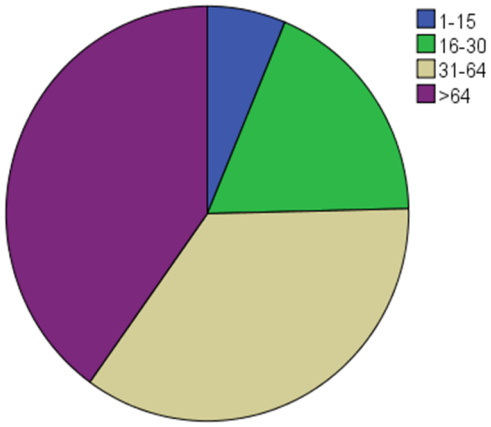

Fig 3 Age Distribution of the Respondents

4.1.4 Marital Status

According to the finding the largest proportions of the respondents were married (41.2 percent), followed by single and widowed which accounts about 23.2 percent and 20.6 percent respectively. And those who divorced account the lowest proportion of the total respondent.

Table 6: Distribution of Marital status by Sex

		Marital Status				Total
		Single	Married	Divorced	Widowed	
Sex	Male	79	159	20	18	276
	Female	45	61	57	92	255
Total		124	220	77	110	531

According to the finding there is a great variation of the marital status of male and females. Most males were married followed by single. But most females were widowed followed by unmarried. Those who divorced and widowed males are few in number but females with such status are large in number. Therefore the marital statuses of the respondents are quite different across sex.

4.1.5 Household Headed

Larger proportions of the respondents were household headed accounting about 61 percent of the respondents. From the total respondents 37.8 percent were not

household headed. Although, the finding shows that most of the household headed were male and those of non-household headed were females, both male and Females were more likely household headed.

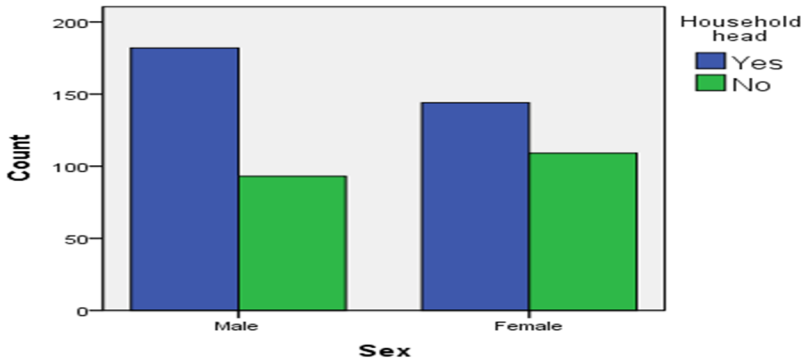

Fig 4 House Headed by Sex

4.1.6 Family Size

Table 7 blow shows that the largest proportion of the respondents (71.9 percent) have family. Only 28.1 percent of the respondents have no family. From those who has family most of the respondents has a medium (4-7) family size followed by those who has small family size (family size of 1-3) and there are smaller proportion (only 4.5 percent) of the respondents whose family size were above seven.

Table7 Distribution of Family size

Family Size			
Range of family size		Number	Percent
	1-3	173	32.4
	4-7	187	35.0
	>7	24	4.5
	Total	384	71.9
	No family	150	28.1
Total		534	100.0

The finding showed that males were more likely to have larger family size than females. When we look at the distribution the number of females having a family were declining as the number of the family size rise. But for males it does not follow such trends.

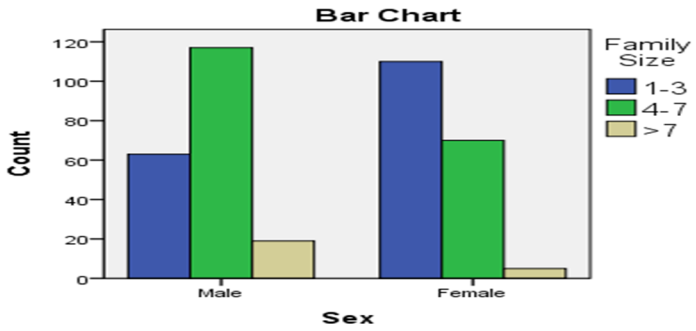

Fig 5 Family Size by Sex

4.2. The Respondents Social and Economic Characteristics

4.2.1 Characteristics of People with Disability

Types of Disability

The survey identified the various types of disabilities that respondents reported as hampering or reducing their ability to carry out or perform day-to-day activities. The findings, as shown in Table 8, indicate that of those who reported a disability, the majority (64.7 percent) were suffering from a physical impairment. Approximately 18 percent of disabled reported a visual impairment and 11.3 percent experienced both hearing and speech difficulties. It was also found that 4.4 percent of respondents had mental disability. An insignificant proportion (about 1.8 percent) of people with disability reported experiencing multiple impairments. For example some individuals experienced both physical and mental disabilities.

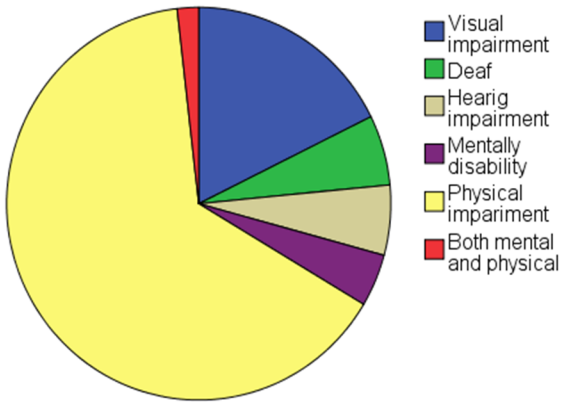

Fig 6 Types of Disability

The finding shows that males were more likely people with disability than females. Male accounts about 56 percent of people with disability while females account about 44 percent. Except hearing impairment in all types of disability male accounts the largest proportion.

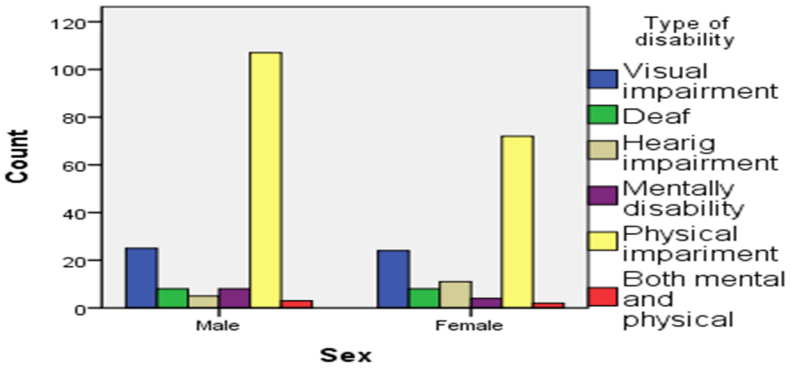

Fig 7 Types of Disability by Sex

Cause of Disability

Responses on causes of disability showed that 52.7 percent had suffered from their impairments due to disease, 25.8 percent due to accidents and 18.2 since birth. The remaining 1.5 percent caused by malnutrition and 1.8 percent due to other external shocks respectively. The finding shows that most of the problems were caused after birth. Only 18.2 percent of the problems were occurred after birth.

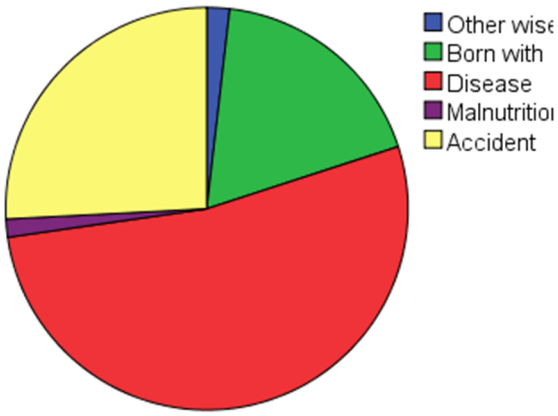

Fig 8 Cause of disability

The main cause for all types of impairment was disease. For example, the main causes of visual impairment were diseases and accident accounting about 75 percent and 14.6 percent of the cause of the impairment respectively. Also for physical impairment this two factors took the largest share accounting about 45.2 percent and 34.5 percent respectively.

Table 8 Cause of Disability by types of disability

					Type of disability		
			Visual impair-ent	Deaf	Hearing impair-ent	Mentally disability	Physical impairme-nt
Cause of disability	Other wise	Count	2	0	0	0	3
		% within Type of disability	4.2%	0.0%	0.0%	0.0%	1.7%
	Born with	Count	2	9	3	3	30
		% within Type of disability	4.2%	56.2%	18.8%	25.0%	16.9%
	Disease	Count	36	7	13	7	80
		% within Type of disability	75.0%	43.8%	81.2%	58.3%	45.2%
	Malnutrition	Count	1	0	0	0	3
		% within Type of disability	2.1%	0.0%	0.0%	0.0%	1.7%
	Accident	Count	7	0	0	2	16
		% within Type of disability	14.6%	0.0%	0.0%	16.7%	34.5%
Total		Count	48	16	16	12	17
		% within Cause of disability	17.5%	5.8%	5.8%	4.4%	64.6%
		% within Type of disability	100.0%	100.0 %	100.0%	100.0%	100%

For those who have hearing impairment, mental disability and deaf the main cause of the problems were born with and disease. Around 56.2 percent of Deaf respondents

were with the problem since birth. But 43.8 percent of the problems were due to disease. Among the respondents which have hearing impairment 81.2 percent were caused by disease and the remaining of 18.1 were since birth. Similarly the main cause of mental disability were disease and born with accounting about 52.3 percent and 25 percent respectively.

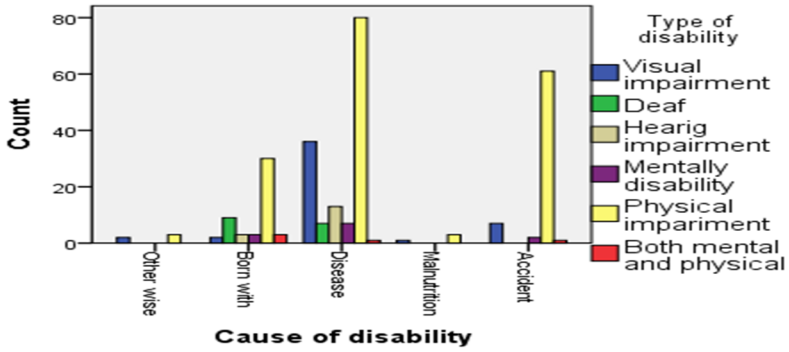

Fig 9 Cause of Disability by Types of Disability

Although most cause of disability does not vary much across sex, males are more likely affected by accident; around 76 percent of the respondents which are disabled due to accident were males. But the other factors affect both male and females almost equally.

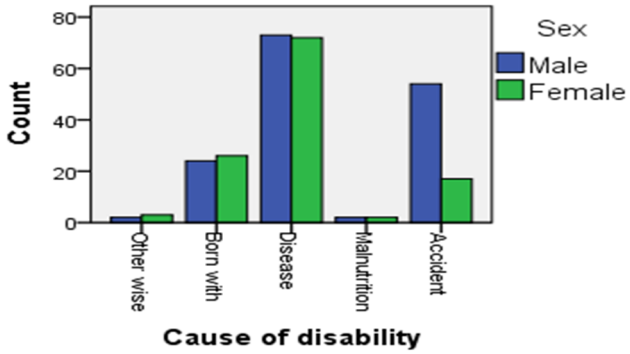

Fig 10 Cause of Disability by Sex

Perform Daily activities

Among the total respondent of people with disability the largest proportion (61.5 percent) were able to perform their daily activities while the remaining 38.5 percent

were unable to perform their day to day activities and relay on other individuals like there family, relatives and other to move from place to place.

Table 9 Performing Daily Activities

		Number	Percent
	Yes	187	61.5
	No	117	38.5
	Total	304	100.0

Although both male and females were more likely to perform their daily activity by themselves, females were less likely to perform their dailiy activity.

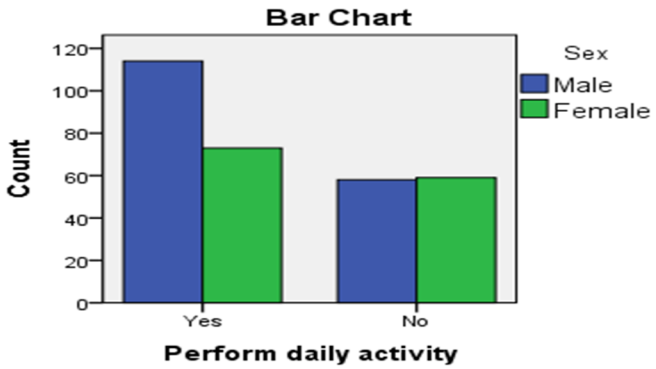

Fig 11Performance of Dailiy Activities by Sex

Among those who do not perform their daily activities by themselves, the larger proportions of the respondents were supported by their family. Around 85.6 percent of the people with disability which needs support to perform daily activities were supported by their family. The remaining 6.3 percent were supported by relatives and 8.1 percent were supported by others. However, females were less likely to get support from Families rather they get more support from others. 12.1 percent of male were geting support from relatives but there were no females getting support to perform her daily activities from relaties.

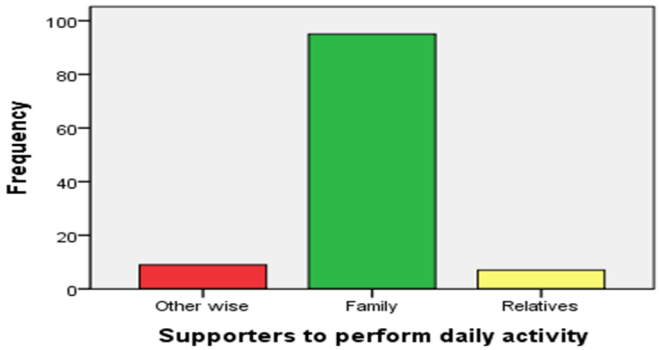

Fig 12A Supporter to Perform Daily Activities

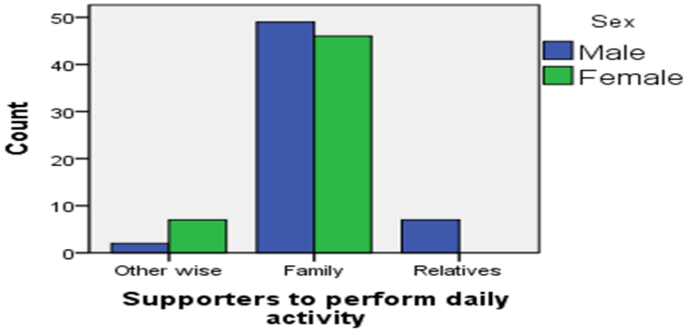

Fig12B Supporters to Perform Daily Activities by sex

Need Assistive Devise

Out of the total people with disability 268 responded to whether they need assistive devise or not. Accordingly the larger proportion about 59 percent of the respondent needs assistive devise to move, to do their day to day activities and for social and economic activities. The remaining 41.4 percent of the respondent do not need it. The finding showed that both male and females were more likely to have assistive devices.

Table 10 Need of Assistive Devise

		Need assistive devices		Total
		Yes	No	
Sex	Male	98	53	151
	Female	59	58	117
Total		157	111	268

Types of Assistive Devise in Need

There are many assistive devices like spectacles, walking sticks, standing frames, wheel chair, hearing tools and braille needed by peoples with disability. Among these devices sine problem many of the disabled peoples were physical impairment most respondents need wheel chair and standing frames. About 23.1 percent and 19.4 percent of the respondent needs wheel chair and standing frames respectively. Around 17.5 percent of people with disability need other devises, and the remaining respondent needs other devise like spectacles (16.3 percent), walking sticks (13.8 percent), hearing tools (9.4 percent) and the others.

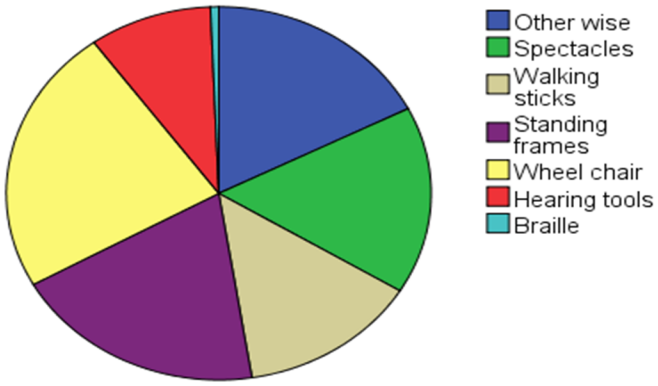

Fig 13 Types of Assistive Device in Need

4.2.2 Educational Background

Level of Education

Although the educational levels of the respondents were lies in different groups standing from illiterate to diploma, majority (63.2 percent) of the respondent were illiterate. We have categorized the level of education in to six groups such as illiterate, grade 1-4, grade 5-10, grade 11-12, certificate and Diploma. Among this the majority of the respondents were illiterate. Next to that 17.4 percent and 17.1 percent of the respondent were found in group grade 5-10 and grade 1-4 respectively. Majority of the respondent of this group are not at school currently. Very small proportion of the respondents had certificate and diploma.

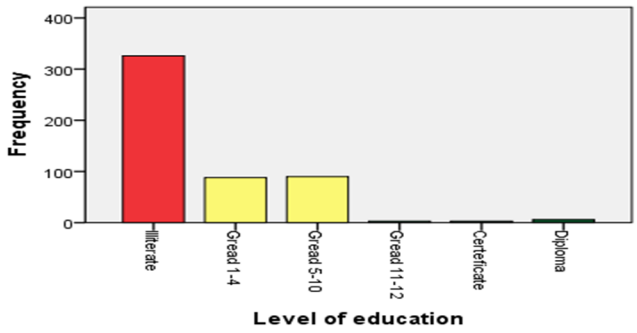

Fig 14 Education Level

The finding shows that male respondents were more likely literate than females. From the total male respondents 49.2 percent of them were literate. But out of the total female respondents only 36.8 percent were literate; the remaining 63.2 percent were illiterate. Except at certificate level at all level of education categories males take the majority part. For example, for the level of education ranging from grade1-4 male respondents account about 65 percent of the total respondents of this category, while females accounts about 35 percent. Also for those which found in the category of grade 5-10 again the mail respondents take the major part which is about 74.4 percent of the respondent of the group.

Table 11 Level of Education by Sex

		Sex				Total
		Male		Female		
		Number	%age	Number	%age	
Level of education	Illiterate	135	41.4 %	191	58.6%	326
	Grade 1-4	57	64.8 %	31	35.2%	88
	Grade 5-10	67	74.4%	23	25.6%	90
	Grade 11-12	3	100 %	0	0	3
	Certificate	0	0	3	100 %	3
	Diploma	4	66.7%	2	33.3 %	6
Total		266		250		516

Currently at School

From the total disabled respondents the majority were less likely at school currently. About 87.7 percent of the respondents were not at school; only the remaining 12.3

percent were at school currently. Both male and female were less likely currently at school.

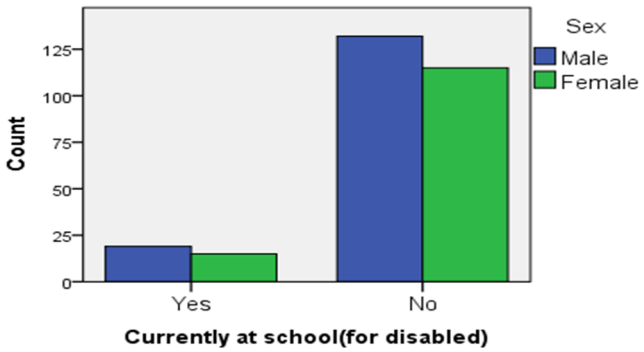

Fig 15 Current Level of Educational Attainment

Many of the respondents both male and female were not currently at school for different reasons. Among these factors some of them have completed, the majority of the respondents were not yet started due to lack of favorable school and also there are many individuals who dropped out. In general the majority of the respondents about 55.7 percent were not start education. Also many of them around 38 percent were dropped out of school. Only 4.2 percent of the respondent were completed their education. The remaining 2.3 of the respondent were not at school for different reasons. For example there are childe which are included under this project but there age is below schooling age.

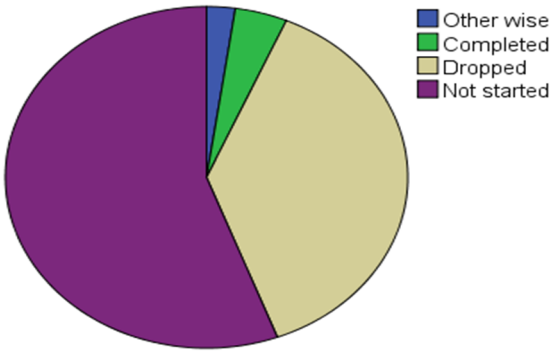

Fig 16 Reasons for not at School

Across sex females were less likely to start schooling than males. From the total of those who did not start schooling the majority which accounts about 56.8 percent of

the respondent were females. But, females were less likely to drop out of school. From the total individuals who dropped schooling the majority (70.7 percent) were males.

Reasons for Dropping or not starting

The finding shows majority of the respondents were not yet started formal education and many of them were dropped. There are many factors accountable for this like lack of income, lack of accessible school that fit with their impairment, lack of support, disease and lack of interest. Among these factors the major challenging one is lack of income. About 34.5 percent of the respondent were dropped or not started schooling due to lack of income. About 18 percent and 15 percent of the respondents were dropped or not started schooling because of lack of support from family and other organization, and lack of accessible school that fit with their impairment. About 20 percent were due to other factors. Only insignificant numbers of respondents were dropped or not started schooling because of negligence at schools. The remaining 10 percent were not started schooling or dropped out due to lack of interest and disease.

Table 12 Reasons for Dropping or not start schooling

		Frequency	Percent
	Other wise	47	20.8
	Lack of income	78	34.5
	Lack of accessible school that fit with my impairment in our area	34	15.0
	Lack of support from family and other organizations	41	18.1
	I have no interest	15	6.6
	Because of negligence in schools	2	.9
	Because of Disease	9	4.0
	Total	226	100.0

According to the survey even if the majority of the respondents were not started and dropped schooling 53.2 percent of them have interest to learn if they gets necessary support. The remaining 46.8 percent have no interest to learn even if they get necessary supports due to their age and some difficulties related to their disability. Male respondents were more likely to have the interest to learn if they get necessary support. Out of the total respondents who have interest 67.2 percent were male and

the remaining 32.8 percent were females. From those who have no interest female accounts about 55.1 percent and the remaining 44.9 percent were male.

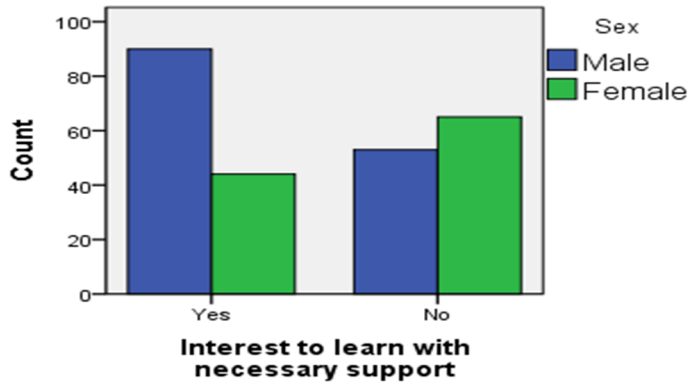

Fig 17 Interest to Learn with necessary support by sex

Types of Educational Support

Among the total respondents which are currently not at school due to dropping or not starting of schooling, 134 of them have an interest to learn if they get necessary supports like financial , counseling, material and conductive schools. However the majority of the respondents (78.9 percent) were in need of financial support. Around 10 percent of the individual who have interest needs conductive school. Next to that 5.2 percent of the respondent needs both financial and material support. The remaining 3 percent, 2.2 percent and 0.7 needs material, counseling and other supports respectively.

4.2.3. Health Condition of Respondents

Under this sub heading the health status of the respondents, frequency of contacting and factor hindering contacting of health center were explained. Accordingly, sometimes the majority of the respondents were suffering from health problem. About 47.4 percent of the respondents were getting sick sometimes. While 13.4 percent of the respondents were very healthy, about 34.1 percent of them were often sick. Also about 4.5 percent of the respondents were suffering from chronically illness.

Table 13 Health Condition of Respondents

		Numbers	Percent
	Very healthy	71	13.4
	I often become sick	182	34.3
	I sometimes become sick	253	47.7
	Chronically ill	24	4.5
	Total	530	100.0

The finding shows that males were more likely healthier than females. From those who get sick often 58.8 percent of them were females and the remaining 41.2 percent were males. When we look those gets sick sometimes majority of them (54.5 percent) were male and the remaining 45.5 percent were females. Although males were more likely healthier than females, the majority of them were suffering from chronically illness.

Types of Chronically Illness

Some of the respondents (4.5 percent) were suffering from different types of chronic illness like HIV ADIS, Cancer, Diabetes and other like Nerve disease. While the majority of the respondents were suffering from different types of chronic illness, about 25 percent were suffering from HIV. The remaining 8.3 percent and 4.2 percent were suffering from cancer and diabetes respectively. Although males were more likely suffering from cancer and diabetes, the number of male and female respondents which were suffering from HIV is equal.

Table 14 Types of Chronically Illness

		Numbers	Percent
	Other wise	15	62.5
	HIV ADIS	6	25
	Diabetes	1	8.3
	Cancer	2	4.2
	Total	24	100.0

Frequency of Sickness

According to the finding of the survey about 220 respondents have no information about the average number of sickness in a year and some of them were very health. About 314 of the respondents have information on the average sickness in a year.

Among those who have information 64 percent of them got sick on average 1-5 times per year. About 20 percent of them suffer from illness more than 10 times per year. The remaining 16 percent got sick on average six to ten times per year.

Table 15 Frequency of Sickness per year on Average

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 times per year	201	37.6	64.0	64.0
	6-10 times per year	50	9.4	15.9	79.9
	> 10 times per year	63	11.8	20.1	100.0
	Total	314	58.8	100.0	
	Missing	220	41.2		
Total		534	100.0		

The survey shows females were more likely vulnerable to illness. Although, in all the three categories the proportions of females were high, it shows the great variation was observed in the second category (six to ten times per year).

Visiting Health Center

If the individual is not health he/she was expected to visit health center. But according to the finding of the survey not all of the respondents were visiting health center when they got sick. However the majority of the respondents which accounts around 65 percent always visit health center for medical care. The remaining 35 percent of the respondents were not visiting health centers for different reasons.

Table 16 Response on visiting of Health Center for Medical Care

		Always visit health center for medical care		
		Yes	No	Total
Sex	Male	158	85	244
	Female	156	87	244
Total		314	172	488

Although both males and females were more likely to visit health center for medical care, females are relatively less likely to visit. There are many factors that hinder some of the individuals visiting of health centers, like shortage of income, unaffordability and inaccessibility of medical treatments and personal views.

According to the finding among these factors the major hindering factor was shortage of income. Although inaccessibility and unaffordability of medical treatments were another factor hindering the individuals, there are some respondents which did not visit health center simply by viewing that the treatment cannot solve their problems.

4.2.4 Social and Living Condition of Respondents

In order to survive any individual made different kinds of social interaction with others in living and work place. But life is very challenging for some individuals especially for people with disability and elders. The survey observed the living condition of the respondents regarding their place of living, roommates, family's treatment, statues of their house, frequency of purchasing of close and alternative way of getting cloth, and some factors hindering them from living better life.

Place of Living

The respondents were living in different place; majority in their own house, some in relative's house, family's house and the other were living in religious institutions and with others. According to the survey about 57.8 percent of the respondents were living in their own houses. About 19.4 percent of the respondents were living in their family's house. Those who live with other persons' were accounts about 4.4 percent. The remaining 1.1 percent and 0.8 percent were living in religious institutions and other place respectively.

Table 17 Place of Living

		Number	Percent
Place of Living	Other wise	4	.8
	In my own house	304	57.8
	In my relatives house	16	3.0
	In my family's house	102	19.4
	In rented house	71	13.5
	With other persons	23	4.4
	In religious institutions	6	1.1
	Total	526	100.0

Even though both males and females were more likely to have their own house, females were more likely to live in rented house, religious institution and with other peoples. Also females were less likely to live with relatives. Therefore, females were relatively more suffering from housing problem.

Room-Mate

Although the room-mate of the majority of the respondents was their families, there were some respondent which were living alone, with relatives, friends and other. The room-mate of 80 percent of the respondents was their families. About 13.2 percent of the respondents were living alone, and around 4 percent and 0.4 percent of them were living with relatives and friends respectively. The remaining 3 percent were living with others.

There were variations among the room-mate across sex. Although both males and females were more likely to live with their families, male were less likely to live alone. Among those who live alone 58.6 percent were females and the remaining 41.4 percent were males. Also females were more likely to live with others, from the total respondents who were living with others 66.7 percent were females. According to the finding males were more likely to live with friends and with his relatives than female.

Table 18 Room-mate by Sex

		Sex		Total
		Male	Female	
Room-mate	Other wise	5	10	15
	With my family	227	194	421
	With relatives	12	10	22
	Alone	29	41	70
	With my friends	2	0	2
Total		275	255	530

Family's Treatment

The degree of the treatment that the families of the respondent were giving is varying from individual to individual depending on many factors like their attitudes towards the respondent. About 40 percent of the respondents were getting very good treatment from their families. Although the majority of the respondents were getting good and very good treatment, about 37.3 percent of the respondents were getting low and very low treatments from their families. The survey shows that about 11.4 percent of the respondents were getting very low treatment from their families.

The survey shows that male respondents were more likely to have good and very good treatment than female respondents. Among those who got very good and good treatment 55.6 percent of them were males and the remaining 44.4 percent of the respondents who got very good and good treatment were females. Among those who

got low and very low treatment the majority were females; about 54 percent of them were females and the remaining 46 percent were males. However, within the sex both males and females were more likely to have good and very good treatment. Among the total male and female respondents respectively about 66.7 percent and 58.4 percent of them were getting very good and good treatment.

The family's treatment towards the respondent was varying not only by sex but it also varies by age. Even though the treatment was varying across age it does not show a significant variation. The majority of the respondents laying in different age group were more likely to get very good and good treatment from their family. While about 71.9 percent of respondents within age group of 1-15 were getting very good and good treatment from their family the remaining 28.1 percent of them were getting low and very low family's treatment. Among the age group of 16- 30 years old, 65 percent of them were getting very good and good treatment from their family. Only 35 percent of them were getting very low and low treatment. For those whose age lies between 31 and 64 years, again like the other group the majority of the respondents (64 percent) within this age group were getting very good and good treatment. Among the respondents with age of above 64 years old 63 percent of them were getting very good and good treatment.

Elders were more likely gets low and very low treatment from their family. Among the respondents, the respondent within the age group of 1- 15 years old were less likely to get low and very low treatment. In general those respondents out of working age group were getting better treatment than those within the working age group.

Table 19 Family's Treatment by Age Group

		Age				Total
		1-15	16-30	31-64	>64	
Very Good	% within Family's treatment	8.9%	22.4%	31.8%	37.0%	100.0%
	% within Age	53.1%	46.7%	36.7%	40.6%	41.3%
Good	% within Family's treatment	5.9%	16.8%	44.6%	32.7%	100.0%
	% within Age	18.8%	18.5%	27.1%	18.9%	21.7%
Low	% within Family's treatment	3.3%	14.9%	39.7%	42.1%	100.0%
	% within Age	12.5%	19.6%	28.9%	29.1%	26.0%

Very low	% within Family's treatment	9.8%	27.5%	23.5%	39.2%	100.0%
	% within Age	15.6%	15.2%	7.2%	11.4%	11.0%
Total	% within Family's treatment	6.9%	19.8%	35.7%	37.6%	100.0%
	% within Age	100.0 %	100.0%	100.0%	100.0%	100.0%
	% of Total	6.9%	19.8%	35.7%	37.6%	100.0%

4.2.4.4 Status of Society Treatment

Just like the social treatment vary from individual to individual, the treatment that the respondents were getting from the societies were also vary. The majority of the respondents were get good treatment from the society. About 35.4 percent of the respondents respond that they were getting good treatment from the society. And about 25.3 percent of them were getting very good treatment. Although the majorities were getting good and very good, treatment from the respondents, about 21.3 percent and 18.1 percent of them were getting low and very low treatment respectively.

Table 20 status of Social Treatment

		Number	Percent
Status	Very good	133	25.3
	Good	186	35.4
	Low	112	21.3
	Very low	95	18.1
	Total	526	100.0

The majority of male and female respondents were getting good and very good treatment from the society. About 61.2 percent of male respondents were got good and very good treatment and also about 60 percent of female respondents were responded by saying they got very good and good treatment from the society. The remaining 38.8 percent of male respondents and 40 percent of female respondents were suffering from low and very low society's treatment. Within treatment females were more likely to get very low treatment.

The survey shows that the status of society's treatment was vary from woreda to woreda. Among the six woredas while Kamashi ranks the first by providing very good treatment, Asosa ranks the last. Assosa, Bambasi and Pawi were on the top by providing good treatment. Among the wordas with very low society's treatment Assosa and Dangur woreda were on the top. Bambasi woreda is on the top with low society's treatment.

Participation in Social Committee (Activities)

In order to sustained their life, to strengthen their social life and to bring sustainable development the societies were organized in to different social communities and committees. But the participation of the society's in this social activities were varies from individual to individual because of different factors like the interest of the individual, social, economic, physical and mental ability of the individuals.

According to the survey, among the total respondents of the survey the majority of them were not participates in any social activities. About 41 percent of the respondents do not participate in social activities. The survey shows 34 percent of the respondents were participates in social activities all in all. The remaining 25 percent of them sometimes participate in social activities.

There were a significant variation between males and females in their participation in social committees. Males were more likely to participate in social activities. Among the total male respondents about 37.7 percent of them were participated in social activities all in all. About 28.2 percent of male respondents were partially participated and the remaining 34.1 percent of them were not participated.

Among the total female respondents the majority (48.6 percent) of them were not participating in social committees. About 29.8 percent of them participated fully and the remaining 21.6 percent were participated partially.

Table 21 Participation in Social Committee by Sex

			Participation in social committees			Total
			Yes all in all	Some times	Do not Participate	
	Male	% within Sex	37.7%	28.2%	34.1%	100.0%
		% within Participation in social committees	57.5%	58.3%	42.9%	51.7%
	Female	% within Sex	29.8%	21.6%	48.6%	100.0%
		% within Participation in	42.5%	41.7%	57.1%	48.3%

	social committees				
Total	% within Participation in social committees	100.0%	100.0%	100.0%	100.0%
	% of Total	33.9%	25.0%	41.1%	100.0%

Among total respondent who participated in social committee all in all about 57.5 of them were males, and the remaining 42.5 percent were females. From those who participated sometimes about 58.3 percent were male and the remaining 41.7 percent were females. According to the survey from those who does not participated in social committee about 57 percent of them were females, and the remaining 42 percent were males. In general males were more likely participated in social committees.

4.2.4.6 Factors Hindering Participation in Social Committee

From the total respondents of our survey only 179 respondents (33.9 percent) participated in social committee all in all. The remaining about 66 percent was not full participated due to different factors. Among the factories that hinder the participation of the respondent's lack of willingness to participate, ignorance from the community, lack of money and lack of physical ability due to disability and oldness were some of them.

The survey shows that the factors that hinder the majority of the respondent were lack of physical ability due to oldness and disability. About 38.4 percent of the respondent which does not fully participated in social activities were suffered from this problem which hinder them from participation in social committee. About 26.9 percent of them were not participant due to financial problem. The remaining 34.7 percent of them were not participated due to other factors like lack of willingness to participate, ignorance from the community and others. Across sex there were no significant variation among the cause of poor participation between males and females.

Status of the House

The majority of the respondents were living in their own house and the others live other pace. But the quality of the house they were living in is quite different. The qualities of the house of the majority of the respondents were poor. About 52.8 percent of the respondents were living in poor quality house. About 32.4 percent of the respondents were living in the house which has good quality. Although 8.4 percent of the respondents were living in house which has very good quality about 6.5 percent of the respondents were living in house which have very poor quality. The status of the house does not show significant variation among sex.

Table 22 Status of the House

		Number	Valid Percent
Valid	Very Good	44	8.4
	Good	170	32.4
	Poor	277	52.8
	Very poor	34	6.5
	Total	525	100.0

Even though the majority of the respondents were living in their own house, the quality of their house was quit poor. Among the respondents which were living their own house, 50.2 percent of them ranked the quality of their house as poor. About 35.3 percent of them ranked it as good. Although 8.9 of them were ranked their house as very good quality, 5.6 percent of them were ranked it as very poor.

Also among those who were living in rented house the majority (52.9 percent) of the respondents were ranked the status of the house they are living in as poor. About 31.4 percent of them ranked it as good. The remaining 8.6 percent and 7.1 percent ranked it as very good and very poor respectively.

Again among those who were living in relatives and families house, the majority of the respondents were ranked the quality of the house they are living in as poor. Almost all the respondents who were living in religious institution and with other persons responded to the quality of the house they are living in as poor and very poor.

Although, among those who have very good quality house the majority were those who have their own house, majority of the respondents who were living in the house with poor quality were also them.

Factors Hindering Construction of Better House

About 60 percent of the respondents were living in house which has poor and very poor quality. Among the factor that hinder construction of better house lack of income, lack of physical ability and lack of land were some of them. According to the survey the major hindering factor for the majority of the respondents were lacks of income. About 83.5 percent of the respondents were suffering from shortage of income to construct better house. About 13.6 percent of the respondents were suffering from lack of physical ability. The remaining were suffering from others problems such as like lack of land others.

Clothing of the Respondents

Cloth is one of the basic needs for human being. Having sufficient cloth has many advantages including better health, good pleasure and happy life. According to the survey the majority of the respondents were suffering from shortage of sufficient cloth. About 76 percent of the respondents have no sufficient cloth.

Table 23 Having Sufficient Cloth

		Number	Percent
Response	Yes	127	24.0
	No	403	76.0
	Total	530	100.0

Although both males and females were more likely have no sufficient cloth, males were relatively better. Among the respondents which have sufficient cloth male accounts the majority which was about 59.8 percent and the remaining 40.2 of them were females. But among the respondents with no sufficient cloth the majorities (50.6 percent) were females. Within sex among the total male respondents 72.4 percent of the respondents were suffering from shortage of cloth. But among the total female respondents about 80 percent of the respondents were suffering from the problem.

There are many factors that hinder the respondents to have sufficient cloth. Among the factors, the one which is challenging for almost all of the respondents was shortage of income. About 98 percent of the respondents state this factor as the main factor hindering them from having sufficient cloth. Also inaccessibility and unaffordability of clothes were another factor for the problem.

On average the majority of the respondents buy cloth once in a year. About 44 percent of the respondents buy cloth once in a year. About 26.4 percent of the respondents were never but it, for some of them their families buy and some of them get cloth aid. Also there were respondents which buy cloth once in two, three or four years once. About 17.2 percent of the respondents were buying cloth within more than two years. The remaining about 12 percent buys it twice and more within a year.

Cloth Aid

Even though many of the respondents were suffering from many problems to have sufficient cloth, some of them were getting cloth aid. About 27.7 percent of the respondents were getting cloth aid. Across sex even though both males and females were less likely to get cloth aid, relatively male respondents were getting more cloth

aid than females. While among the total male respondents 28.5 percent of them get cloth aid, from female respondents only 26.8 percent of them were getting the aid.

Table 24 Cloth Aid by sex

			Sex		Total
			Male	Female	
	Yes	% within Get clothe aid	53.4%	46.6%	100.0%
		% within Sex	28.5%	26.8%	27.7%
		% of Total	14.8%	12.9%	27.7%
	No	% within Get clothe aid	51.2%	48.8%	100.0%
		% within Sex	71.2%	73.2%	72.2%
		% of Total	36.9%	35.2%	72.2%
		% of Total	0.2%	0.0%	0.2%
		% within Get clothe aid	51.9%	48.1%	100.0%
		% within Sex	100.0%	100.0%	100.0%
		% of Total	51.9%	48.1%	100.0%

According to the survey some of the respondents were getting cloth support from families, relatives, both governmental and nongovernmental organization and generally from the society. The majority of the respondents (about 48.3 percent) were getting support from their families. Also about 24.3 percent of the respondents were getting cloth aid from their relatives. About 20 percent of them were getting it from the society. Governmental and nongovernmental organization were providing only insignificant amount of cloth aid.

4.2.5 Economic status of the Respondent

From the table 4.1 and figure 1 we observed that 257 respondents were elders out of which 97(37.7%) elders were having a job and 160(62.3%) elders were not currently having jobs. From the total of 277 disable people 60(21.9%) were currently having a job and 214(78.1%) of disable were not currently have a job.

Table 25 Statues of respondent by job

Status of the respondent * Have job currently Cross tabulation

		Have job currently		Total
		Yes	No	
Status of the respondent	Elder	97 (37.7%)	160 (62.3%)	257
	Disable	60(21.9%)	214 (78.1%)	274

Figure 35 statuses of the respondents by job

From below diagram 37.7 percent (97) of elder household have a job. Out of which 55.56% were working as a farmer, 29.29% corporates their own business, 1.01% were government employee, 6.06% of elders were employed on private sector and 8.08% of the elders were worked other than the above category.

Elder respondents who have occupation versus income they got from their occupation annually

It is revealed that most of the elder respondents annual income were 1500 and 2000 birr, followed by 1000 and 1500 and around an average of 3 percent of the respondents had an income 2500-12000 birr annually.

Elder respondents who have occupation versus whether their income sufficient for living or not

Data provided by figure 38 below indicate that 91.21% of the respondents revealed that their income were not sufficient for living and only 8.79% of respondents income were sufficient for living.

Elder respondents who have occupation versus whether they have additional source of income or not

Data in table 36 below reveal that majority of the respondents (68.0%) have no additional income. The only 7.2% of elder respondents have additional income during interviewed.

Table 26 Additional Income

Responses	Frequency	Percent
Yes	7	7.2
No	66	68.0
None responses	24	24.7
Total	97	100.0

Elder respondents who have additional income versus source of additional income

We observe that out of 7 elders who have an additional income 60% of the respondents got from their family followed by 20% from relatives and the remaining 20% from society or other sources.

Elders who do not have job versus the reason

Baseline data shows that out of 257 elder peoples, 62.3 percent (160) were not currently having a job due to so much old, sickness, disabled, availability of job opportunity that fits with them and others.

From the figure 40 below show that most of the older people said that the reason for not to have a job out of 160 (71.52 percent of the respondent) were due to being so much elder, they cannot do anything, 14.56 percent due to sickness, 5.7 percent had a disable and 3.8 & 4.43 percent of the respondents said that there is no job opportunity in their compound and others respectively.

Source of income for elders who do not have job

It is further reveal that the source of income for non-job elders were 48% family, 10% relative, 11.3% society 2.67% government support, 6.67% selling or renting of assets, 4.67% begging and 16.67% of respondents have no source of income out of 62.3 percent (160) elders who have no occupation.

Disable people with having job versus type of job: About 60% of disabled respondents were having a job. Out of which 58.46% were corporates their own business, 18.46 percent working as a farmer, 6.15% were government employee, 6.15 % of disable were employed on private sector and 10.77% of the disable were worked other than the above category.

It is found that average annual income of the respondents is 5,125.85 Ethiopian birr. And also the respondents income more frequently in between the interval 0-5000 birr and less frequencies found between 10000-20000birr.

Disable respondents who have occupation versus Sufficiency of income obtained from job for living, Additional source of income, Source of additional income:

Findings in table 37 reveal that majority of the respondents income were not sufficient for living (93.3%) and only 5% of respondent's income were sufficient for living. (71.7%) have no additional income. 6.7% of disable respondents have additional income during interviewed.

Table 27 Sufficiency of Income, Additional income and its source

Type of variable	Response	frequency	percent
Sufficiency of income obtained from job for living	Yes	3	5.0
	No	56	93.3
	None response	1	1.7
	Total	60	100
Additional source of income	Yes	4	6.7
	No	43	71.7
	None response	13	21.7
	Total	60	100
Source of additional income	Otherwise	1	1.7
	Family	3	5
	Government support	2	3.3
	None response	57	90
Total		60	100

Disable who do not have job versus the reasons

Most of the disable people said that the reason for not to have a job out of 214 (59.51 percent of the respondent) were due to disability. 7.8 percent due to sickness, 11.71

percent due to so much old and 6.83 & 14.15 percent of the respondents said that there is no job opportunity in their compound and others respectively.

Table 28 Non job for disable respondents versus source of income

Responses		Frequency	Percent
Source of income	Family	117	58.8
	Relatives	12	6.0
	Society	14	7.0
	NGO	3	1.5
	Government support	12	6.0
	Selling or renting of asset	3	1.5
	Begging	8	4.0
	I have no source of income	30	15.1
Total		214	100.0

The source of income for non-job disables respondents were 58.8% family, 6% relative, 7% society 6% government support, 1.5% NGO and selling or renting of assets, 4% begging and 15.1% of respondents have no source of income.

Only 7.22% of elders had save their money out which they have job. 82.5% of elders who have a job were not have a saving habit and the rest of them (10.31% of elders were nonresponse).

Table 29 Saving

Response	Frequency	Percent
Yes	7	7.2
No	80	82.5
Non response	10	10.3
Total	97	100.0

With regard to respondents saving habit as we have seen that most of the respondents had save with the range of 0-1000 Ethiopian birr annually. Small number of respondents had saved in the range 3000.00 up to 4000.00birr.

Status of the respondent * Reason for not saving

Table 30 Interest to participate in any job with necessary support by status

Status of the respondent * Interest to participate in any job with necessary support					
			Interest to participate in any job with necessary support		Total
			Yes	No	
Status of the respondent	Elder	Count	191	51	242
		%	78.9%	21.1%	100.0%
	Disabled	Count	218	42	260
		%	83.8%	16.2%	100.0%
Total		Count	409	93	502
		%	81.5%	18.5%	100.0%

In responding to the question do you have an interest to participate in any job with necessary support more than three fourths of in both status elders and disable respondents (78.8% and 83.8%) said yes respectively.

Status of the respondent versus type of job support needed

Most of the respondent officials claimed that they need to support initial capital in both status of respondents (i.e 155 elders and 180 disable respondents responded startup capital), 31 respondents in both status need training, 11 respondents need machinery 15 respondents need working place ,23 respondents wants both startup capital and training.

status of respondent with feeding status of respondents : More than one third of the total respondent in both elders and disable(45%) they feed 2 time per day of feeding ,32% three times per day, 20% once per day.1.5% others.

Table 31satus of Feeding by Status of the respondents

			Status of feeding			
			Very good	Good	Low	Very low
Status of the respondent	Elder	Count	17	58	129	53
		%	6.6%	22.6%	50.2%	20.6%
	Disabled	Count	12	75	137	49
		%	4.4%	27.5%	50.2%	17.9%
Total		Count	29	133	266	102
		% within Status	5.5%	25.1%	50.2%	19.2%

Figure 53 Source of Food

From the above figure we observe that the sources of food for most of elder respondents were gained from their income and disable respondents from their family.

Table 32 percentage of status of feeding on status of respondent

			Status of feeding			
			Very good	Good	Low	Very low
Status of the respondent	Elder	Count	17	58	129	53
		% within Status of the respondent	6.6%	22.6%	50.2%	20.6%
	Disabled	Count	12	75	137	49
		% within Status of the respondent	4.4%	27.5%	50.2%	17.9%
Total		Count	29	133	266	102
		% within Status of the respondent	5.5%	25.1%	50.2%	19.2%

From the above table the status feeding for elder respondent were 6.6% very good, 22.6% good 50.2% low and 20.6% very low. In the same way the status of feeding for disable respondents were 4.4% very good, 27.5% good, 50.2% low and 17.9% very low.

Variable on elders weather society Considered as a productive citizen

Table 33 percentage of elder respondents weather society Considered as a productive citizen

Response		Frequency	Percent
	Yes	124	48.2
	No	124	48.2
	Total	248	96.5
Non Response		9	3.5
Total		257	100.0

As we have seen from the above table half of elder respondents said that the society Considered as a productive citizen and half of them are not.

Variable on the status of elders society Considered as a productive citizen

Table 34 Consideration of the respondents as a productive citizen by society

		Frequency	Percent
	Very high	26	10.1
	High	50	19.5
	Medium	49	19.1
	Low	9	3.5
	Total	134	52.1
Non response		123	47.9
Total		257	100.0

5. Conclusion and Recommendation

5.1 Conclusions

Basic and Demographic Information on People with Disability and Elders

The finds states that on the total of 534 people with disability and elders were collected from three zones and six woredas during the survey. Out of 534, 188 (35.2 percent) of the peoples were from Assosa zone, 170 (31.8 percent) were from Metekel and the rest were from Kamash Zone. When we look its distribution across woreda the largest proportion were from Bambasi which accounts about 100 peoples (18.7 percent), followed by Agallometi 90 (16.9 percent) and powi 88 (16.5 percent) and Assosa 88 (16.5 percent) respectively. Kamashi woreda with 86 respondents (16.1 percent) and Dangur woreda with 82 respondents (15.4 percent) share the lowest proportion.

Out of the total 534 respondents 277, which accounts about 51.9 percent were male and the remaining 257 were females. From the total respondent of 534, 277 (51.9 percent) were people with disability and 257 (48.1 percent) were elders. The finding shows that larger proportion of the respondent lies in the working age group accounting about 52.6 percent of the total respondent. According to the finding the largest proportions of the respondents were married (41.2 percent), followed by single and widowed which accounts about 23.2 percent and 20.6 percent respectively. And those who divorced account the lowest proportion of the total respondent.

The Respondents Social and Economic Characteristics

The findings indicate that of those who reported a disability, the majority (64.7 percent) were suffering from a physical impairment. Approximately 18 percent of disabled reported a visual impairment and 11.3 percent experienced both hearing and speech difficulties. It was also found that 4.4 percent of respondents had mental disability. An insignificant proportion (about 1.8 percent) of people with disability reported experiencing multiple impairments. For example some individuals experienced both physical and mental disabilities.

Responses on causes of disability showed that 52.7 percent had suffered from their impairments due to disease, 25.8 percent due to accidents and 18.2 since birth. The remaining 1.5 percent caused by malnutrition and 1.8 percent due to other external shocks respectively. The finding shows that most of the problems were caused after birth. Only 18.2 percent of the problems were occurred after birth.

Among the total respondent of people with disability the largest proportion (61.5 percent) were able to perform their daily activities while the remaining 38.5 percent were unable to perform their day to day activities and relay on other individuals like there family, relatives and other to move from place to place. Among those who do not perform their daily activities by themselves, the larger proportions of the respondents were supported by their family. Around 85.6 percent of the people with disability which needs support to perform daily activities were supported by their family.

The finding showed that the larger proportion about 59 percent of the respondent needs assistive devise to move, to do their day to day activities and for social and economic activities. The remaining 41.4 percent of the respondent do not need it. About 23.1 percent and 19.4 percent of the respondent needs wheel chair and standing frames respectively. Around 17.5 percent of people with disability need other devises, and the remaining respondent needs other devise like spectacles (16.3 percent), walking sticks (13.8 percent), hearing tools (9.4 percent) and the others.

Educational Background

The finds shows that the educational levels of the respondents were lies in different groups standing from illiterate to diploma, majority (63.2 percent) of the respondent were illiterate. Majority of the respondent of this group are not at school currently. Very small proportion of the respondents had certificate and diploma. About 87.7 percent of the respondents were not at school; only the remaining 12.3 percent were at school currently. Both male and female were less likely currently at school.

The finding shows about 34.5 percent of the respondent were dropped or not started schooling due to lack of income. About 18 percent of the respondents were dropped or not started schooling because of lack of support from family. About 20 percent were due to other factors. Only insignificant numbers of respondents were dropped or not started schooling because of negligence at schools.

Among the total respondents which are currently not at school due to dropping or not starting of schooling, 134 of them have an interest to learn if they get necessary supports like financial , counseling, material and conductive schools. However the majority of the respondents (78.9 percent) were in need of financial support. Around 10 percent of the individual who have interest needs conductive school. Next to that 5.2 percent of the respondent needs both financial and material support. The remaining 3 percent, 2.2 percent and 0.7 needs material, counseling and other supports respectively.

Health Condition of Respondents

The baseline study shows that about 47.4 percent of the respondents were getting sick sometimes. While 13.4 percent of the respondents were very healthy, about 34.1 percent of them were often sick. Also about 4.5 percent of the respondents were suffering from chronically illness. The majority of the respondents which accounts around 65 percent always visit health center for medical care. The remaining 35 percent of the respondents were not visiting health centers for different reasons.

According to the survey about 57.8 percent of the respondents were living in their own houses. About 19.4 percent of the respondents were living in their family's house. Those who live with other persons' were accounts about 4.4 percent. The remaining

1.1 percent and 0.8 percent were living in religious institutions and other place respectively. About 40 percent of the respondents were getting very good treatment from their families. Although the majority of the respondents were getting good and very good treatment, about 37.3 percent of the respondents were getting low and very low treatments from their families. The survey shows that about 11.4 percent of the respondents were getting very low treatment from their families.

About 35.4 percent of the respondents respond that they were getting good treatment from the society. And about 25.3 percent of them were getting very good treatment. Among the total male respondents about 37.7 percent of them were participated in social activities all in all. About 28.2 percent of male respondents were partially participated and the remaining 34.1 percent of them were not participated. Among the total female respondents the majority (48.6 percent) of them were not participating in social committees.

According to the survey the majority of the respondents were suffering from shortage of sufficient cloth. About 76 percent of the respondents have no sufficient cloth. About 44 percent of the respondents buy cloth once in a year. About 26.4 percent of the respondents were never bought it, for some of them their families buy and some of them get cloth aid. Also there were respondents which buy cloth once in two, three or four years once.

Economic Characteristics of the respondent

The study shows that 257 respondents were elders out of which 97(37.7%) elders were having a job. Out of which 55.56% were working as a farmer, 29.29% corporates their own business, 1.01% were government employee, 6.06% of elders were employed on private sector and 8.08% of the elders were worked other than the above category and 160(62.3%) elders were not currently having jobs.

From the total of 277 disable people 60(21.9%) were currently having a job. Out of which 58.46% were corporates their own business, 18,46 percent working as a farmer, 6.15% were government employee, 6.15 % of disable were employed on private sector and 10.77% of the disable were worked other than the above category. About 214(78.1%) of disable were not currently have a job. The baseline study revealed that the source of income for non-job disables respondents were 58.8% family, 6% relative, 7% society 6% government support, 1.5% NGO and selling or renting of assets, 4% begging and 15.1% of respondents have no source of income.

The most of the respondent officials claimed that they need to support initial capital in both status of respondents (i.e 155 elders and 180 disable respondents responded startup capital), 31 respondents in both status need training, 11 respondents need machinery 15 respondents need working place ,23 respondents wants both startup

capital and training. More than one third of the total respondent in both elders and disable(45%) they feed 2 time per day of feeding ,32% three times per day, 20% once per day.1.5% others. The study shows that status of feeding for elder respondent were 6.6% very good, 22.6% good 50.2% low and 20.6% very low. In the same way the status of feeding for disable respondents were 4.4% very good, 27.5% good, 50.2% low and 17.9% very low.

5.2 Recommendation

Based on the findings of the current study we forward the following recommendations:

- The oldest of the older people (particularly those aged 80 years and above) and older people with disabilities, could be specifically targeted by TLGHLM programmes.
- Be recommended that instead of them going out of their homes and looking for work, a proper mechanism must be developed by which the abilities of TLGHLM are examined and based on that a self-sustaining way of earning a living is offered to them.
- All concerned bodies should conduct similar research on health, education and livelihoods of elders and disable persons in order to solve problems related to this survey in all parts of the country so.
- Quantitative evaluations on the impact of the TLGHLM programs on the lives of elder and disabled people are important. There is however a need to devise qualitative tools for evaluating the impact of programs such as *the most significant change tool* that is being used.
- The study highlighted that sectoral policies, have incorporated disability issues across their long-term strategic plan. However the sectors are not equally progressive in devising clear strategy or putting in place the necessary checks and balance to ensure the implementation of policies.

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