THE RELATIONSHIP BETWEEN DOLLARIZA HON AND MONETARY POLICY IN LIBERIA

BY

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DECLARATION

I declare that this project is my original work and has not been presented for an award of a degree in any other University.

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This research project report lias been submitted for examination with my approval as (he University Supervisor.

This research project has been submitted for examination with my approval as (he University Supervisor.

Signed,   Datj O n l' ^

Supervisor: Dr. Josiah O. Aduda

DEDICATION

This project is dedicated to my parents, Mr. Daniel E. Gouid. Sr., Mrs. Edna R. Gould and Mrs. Linda E.T. Brown who made my educational sojourn a success, and without their parental guidance I wouldn't have readied this far.

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LIST OF ABBREVIATION

ABLL	Access Bank L iberia Limited
y\PBL	Afriland First Bank Liberia
CBL	Central Bank of Liberia
EBLL	ECO Bank Liberia Limited
EU	European Union
FIBLL	First International Bank Liberia Limited
G AC	General Auditing Commission of Liberia
GBLL	Global Bank Liberia Limited
GOL	Government of Liberia
GTBL	Guaranty Trust Bank Liberia
HDI	Human Development Index
IBL	International Bank of Liberia
IC	Investment Committee

IMF   International Monetary Fund

ABSTRACT

Dollarization denotes the use **of** n foreign currency in any of its three functions: unit of account means of exchange and store of value. In terms of the latter aspect, dollarization has been increasing in many countries including Liberia, the Philippines, amongst others.

Empirical tests that confirm the significance of dollarization are generally flawed but what is more important is to determine the impact of dollarization on the efficacy of monetary policy and the choice of exchange rate regime. Full dollarization or official dollarization has both its costs and benefits but this is not a viable option for many countries. Dollarization can occur in two ways. In de facto dollarization, or "currency substitution,[?] the dollar or hard currency is used in private transactions as a unit of account, as a medium of exchange, and as a store of value), but is not legal tender.

Another path to dollarization occurs when a foreign government makes a conscious decision to re-place its own currency with the U.S. dollar. In official dollarization, the hard currency becomes legal tender for at least one of these purposes, but not necessarily exclusively. In full dollarization, the dollar is the only legal tender and the country's own national currency ceases to exist. This is the case in Panama, Micronesia, East Timor, an others. In a country with limited dollarization, this policy shift can take the form of allowing residents to hold dollar-denominated accounts. For example, in Argentina, whose currency board pegs the currency to the dollar by law, banks offer dollar accounts and dollars circulate freely alongside the peso.

Liberia's situation is an unofficial or de facto dollarization which causes citizens to lose faith in the Liberian dollars and turn away from it toward the dollar; and has long been observed in where high inflation causes the Liberian dollar to lose its value quickly and deprcciate regularly. Prices are also unstable or unpredictable that using dollars is more predictable than inflation indexed contracts. Conversely, banks are unwilling to make long-term loans in Liberia sincc the money used to repay will be worth much less than the amount lent and the highest duration of loans is Liberia is three (3) years.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The overriding goal of monetary policy is to attain and maintain a low and stable rate of inflation and to reduce the volatility of aggregate output. However, a widely held view among economists and policymakers is that dollarization restricts the scope for independent monetary policy **and** makes it more complex **and** less effective. Financial dollarization, defined as the substantial presence of foreign currency denominated assets and liabilities in the balance sheets of the main sectors of an economy, is a widespread phenomenon among developing economies, especially in Latin America and Turkey. Since financial dollarization often causes financial fragility and limits the effectiveness of monetary policy, the causes and consequences of it and depolarization strategies have been placed at the forefront of policy debates especially in developing countries.

I To this end, this study considers the effects of monetary policy stance (exchange rate flexibility and adoption of a *de facto* inflation targeting regime), institutional structure (governance) and macroeconomic stance variables (volatilities of inflation and real effective exchange rates) on financial dollarization. The results based on panel data estimations j suggest that high and volatile inflation and depreciation of domestic currency induce a switch to dollar denominated assets and liabilities. Furthermore, exchange rate regime flexibility appears to reduce liability dollarization and encourage asset dollarization.

Dollarization is a situation where the citizens of a country officially or unofficially use a foreign country's currency as legal tender for conducting transactions (Savastano, 1996). That **is, the** country uses foreign currency in parallel to or instead of the domestic currency as a **store of value, unit of account, and**/or medium **of** exchange **within** the domestic economy. The term is not only applied to usage of the United States dollar, but generally to the use of **any** loreign currency as the national currency (Yeyati, 2003). The only currencies used by **other** countries for official dollarization are the United States dollar, the Euro, the New **Zealand** dollar, the Swiss franc, the Indian rupee and the Australian dollar.

1 arma (2004) contents that modern contributions have placed more emphasis on a financial channel rather than on the standard trade channel. In light of the dollarization process taking

place in a number of emerging economies over the last decades, this research stresses the mismatch between foreign currency denominated debt and domestic currency denominated revenues.

Fischer. (2001) contents that the countries and territories that have had a dollarized monetary svstem are very small indeed. Many are city-states well integrated into their neighbors' economies Monaco, Lichtenstein, the Vatican and Andorra are good examples. Some of them are **not only** tiny, **but also** have an exciting and romantic origin. **This** is the case of Pitcairn Island, the place where a group of English mutineers and Tahitian women settled in I 7% **Many** of the dollarized economies are so small that they do not have data on basic economic indicators such as inflation or growth. (Capsids, 2004).

The driving force for currency and asset substitution has generally been economic instability and high inflation. In many emerging economies experiencing hyperinflation, dollarization became very widespread, as the public sought insulation from the cost of holding domestic-**currency assets. An interesting** fact **is** that **inflation** has been tamed but dollarization has continued to increase in many countries. Only a few have managed to dedollarize and generally only partially. (Krugman 1999).

The so-called hysteresis in the dollarization process is probably easier to explain for asset substitution than for currency substitution. This is because foreign currency denominated assets would still provide insurance against the probability of a return to inflation and devaluation. In the same vein, the increase of foreign currency denominated assets in the 1990s resulted from the return of capital held by the residents abroad and re-monetization thanks to the permission to hold foreign-currency deposits in the domestic banking system. Remittances may also induce asset dollarization in as far as they are kept in foreign currency.

1.1.1 Dollarization in Liberia

Liberia is a country in West Africa that is bordered by Sierra Leone on the west, Guinea on **the north** and Cote d'lvoire on the east. Liberia covers an area of 111,369 km^2 and is home to about 3.7 million people (Adebajo. 2002). It is one of the world's poorest countries, with a formal employment rate of only 15%. Though GDP per capita peaked in 1980 at US$496 **when it** was comparable to Egypt's, the country's nominal GDP was US$974 million, while **nominal GDP** per capita stood at US$226 in 2010 which was the third-lowest in the world

(International Monetary Fund, IMF, 2011). Historically, the Liberian economy has depended heavily on foreign aid, foreign direct investment and exports of natural resources such as iron ore, rubber and timber (Bateman, £gan, Gold and Gardner, 2000). However, Liberia is **currently ranked** as one of the 2.0 fastest growing economies in the world with a growth rate of 5.1% in 2010 and 7.3% in 2011 (IMF, 201 1).

Impediments to economic growth of Liberia has been include a small domestic market, lack of adequate infrastructure, high transportation costs, poor trade links with neighboring countries and the high dollarization of the economy (Xu, 2006) Liberia used the United States dollar as its currency from 1943 until 1982 and continues to use the U.S. dollar alongside the Liberian dollar (Adebajo, 2002). This makes Liberia officially a dual currency regime. While either currency can be used for any transaction, most economic activity lakes place in U.S. dollars, including the payment of taxes and government expenditures. Since 2003, with the end of civil war, the Liberian government has expressed interest in strengthening the role of the Liberian dollar.

1.1.2 Monetary policy system in Liberia

Liberia has a current small size of the banking system with only 9 commercial banks , poor state of the financial structures, considerable weakened macro economy, lack of an effective interface between fiscal and monetary operations in general terms. The Liberian civil war which started in late 1989 brought massive destruction upon the country. It is self-evident that monetary policy plays an important role in the performance of an economy of any nation. However, the effectiveness of the policy in achieving the intended goal largely depends on the institutional factors that constrain or facilitate the implementation process of the policy.

Standard models of currency substitution explain the ratio between local and foreign currency nominal balances as a function of the nominal interest rates in each currency. Assuming that **the** uncovered interest parity holds, and that inflation is ultimately reflected in the nominal **exchange** rate, expected inflation should foster currency substitution (Levy2006). Asset **substitution depends** on **risk and** return considerations about domestic and foreign assets but **also on the** regulatory framework, which may foster one or the other type of investment.

1 ne recurrence of currency crises has generated an intense debate on exchange rate policies. ' ᶜoged-but-adjustable exchange rate regimes have rapidly lost adepts, while hard pegs and freely floating rates have gained in popularity Summers,(2000) A growing number of

economists have gone as far as arguing that (many) emerging nations should completely give up their national currencies, and adopt an advanced nation's currency as legal tender. This policy proposal has come to be known by the general name of dollarization. Countries that use a foreign currency as legal tender can be divided into two groups. The first one corresponds to independent nations, while the second group includes territories, colonies or regions within a national entity. Panama is an example of the first type of country, while Puerto Rico belongs to the second group

1.2 Statement of problem

It is self-evident that monetary policy plays an important role in the performance of an economy of any nation. However, the effectiveness of the policy in achieving the intended goal largely depends on the institutional factors that constrain or facilitate the implementation process of the policy. Having emerged from a devastating civil war which lasted for about 14 years and exacerbated the fragility of the financial sector and the macroeconomy, a formulation of a monetary policy framework for Liberia must be designed to address those issues that tend to undermine efforts at engendering improvement in the national economy.

According to Galindo and Leiderman (2005), importance of dollarization is that it ensures fiscal discipline and dampens policy and exchange rate risks. They states further that it brings about a higher level of confidence among international lenders and investors thereby lowering interest rates, fiscal expenditures (as a result of lower interest payments), encouraging more foreign direct investment and consequently boosting investment, exports **and GDP. Besides, dollarization** establishes **a** firm basis for a **sound** financial sector and avoids a balance of payment crisis.

However, these benefits don't come without a price. Dollarization poses an extra challenge lor monetary policy effectiveness and leads to a weaker transmission In addition, a major concern of monetary policy in dollarizcd economies is the balance sheet effect that entails increased financial vulnerability; that is, dollarization creates an inevitable currency mismatch that can unfold into a catastrophic scenario for the whole economy (Galindo and feiderman, 2005). Galindo and Leiderman further states that full dollarization wipes away control of monetary and exchange rate policy from the dollarizing country and the ability of the central bank to print banknotes ceases to exist and this, in turn, limits the bank's lender-

of-laSt resort function. The country loses seigniorage, abandons its national currency which is a symbol of sovereignty and nationhood.

Liberia is one of **the** most highly dollarized economies in the world which is partly reflects the **surroundings** in which financial markets operate. In Liberia, prices of all goods and **services** are tied to the US dollar through the exchange rare, U.S dollar accounts for about 90% of money supply. The difficulty in maintaining the exchange rate stable has generally been due to a shortage of foreign reserves which has undermined the Central Bank's ability to periodically intervene in the market when it becomes necessary to (Central Bank of Liberia, 2005). Hence, there is good reason why monetary policymakers should care about this phenomenon.

Evidence on the costs of dollarization is mixed. Reinhart, Rogoff, and Savastano **(2003)** found no evidence in a study of 85 dollarized countries that dollarization has a significant negative impact on the effectiveness of monetary policy. They show that dollarization does not increase the instability of velocity measures of monetary aggregates and those monetary aggregates are highly correlated with inflation, suggesting that in dollarized economies monetary policy is effective at controlling inflation. Gaiindo and Leiderman **(2005)** study suggested that countries should care about dollarization for financial stability reasons related to the balance sheet effects of dollarization, i.e., when the increase in the local currency value of dollar liabilities outpaces the increase in the value of the borrower's assets or income flow. In Liberia, No study has been done on the effect of dollarization on the monetary policy. This study seeks to till-in this knowledge gap by answering the question: how does dollarization influence the monetary policies of Liberia?

1.3 Research objective

I he objective of this study is to investigate the relationship between dollarization and monetary policy in Liberia

1.4 Significance of the research

This study is of significance to Liberian citizens and foreigners intending to invest in Liberia as it seeks to determine how dollarization has affected the countries monetary policies. From the findings of the study, the quintessence of dollarization and lack there-of will be

illuminated and its influence on macro-economic aggregates which influences investment **decisions.**

The study is invaluable to the monetary policy decision makers as it evaluates Liberia's extent of dollarization. This study assesses the benefits and challenges of macroeconomic management in a dollarized economy and suggests lessons and policy options for Liberia to insulate the excesses of dollarization, if any.

Being that few stud.es have been done in Liberia on the relationship between dollarization and monetary policy, this study is of importance to scholars and academician, both in Kenya and Liberia, for the knowledge it adds in the area. Therefore, (his study acts as a point of **reference for** future studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter highlights the concept of dollarization, some of its definitions and its importance in the financial health of a firm. The chapter also briefly presents relevant theories that support and explain various issues in relationship between dollarization and monetary policy as **well** as reviews some of the studies that have been carried out in the area of the relationship . It also includes a review of empirical studies that have been conducted in dollarization both in Liberia and elsewhere in the world.

2.2 Theories behind dollarization

Financing decisions are related to the mix of debt and equity used by firms in financing an investment or the composition if a firms long term financing consisting of a firms long term debt, equity and preferred stock as well as the relationship between profitability and capita!. Theoretically, full dollarization represents a trade-off between potential gains and losses. Recently, some emerging countries have, indeed, decided to officially dollarize their economies. In 2000, for example, and in the midst of a major crisis, Ecuador abolished its currency, the *Sucre,* and adopted the U.S. dollar. El Salvador adopted the dollar during 2001; and in May

2001, the dollar became legal tender in Guatemala. Supporters of dollarization have argued that countries that give up their currency will be unable to engage in monetary and lnacroeconomic mismanagement. Public finances will stay in balance, macroeconomic policy (or what is left of it) will be credible, and the external accounts will move within reasonable bounds. According lo this view, dollarization will have two major positive effects on economic performance:

First, inflation will be lower in dollarized than in non-dollarized nations. Alesina and Barro
» (2001 p. 382), for instance, have argued that adopting another nation's currency "eliminates the inflation-bias problem of discretionary' monetary policy. Second, countries that give up their currency will tend to grow faster than non- dollarized countries. This growth effect is supposed to take place through wo channels: dollarization will mean lower interest rates, [h]«gher investment, and faster growth (Dornbusch 2001). And (b), by eliminating exchange

rate volatility, dollarization is supposed to encourage international trade and this, in turn, will result in faster growth.

Monetary policy rests on the relationship between the rates of interest in an economy, that is, the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment. Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate (to achieve policy goals). The beginning of monetary policy as such comes from the late J 9th century, where it was used to maintain the gold standard.

A policy is referred to as contractionary if it reduces the size of the money supply or increases it only slowly, or if it raises the interest rate. An expansionary policy increases the size of the money supply more rapidly, or decreases the interest rate. Furthermore, monetary policies are described as follows: accommodative, if the interest rate set by the central monetary authority is intended to create economic growth; neutral, if it is intended neither to create growth nor combat inflation; or tight if intended to reduce inflation.

There are several monetary policy tools available to achieve these ends: increasing interest rates by flat; reducing the monetary base; and increasing reserve requirements. All have the effect of contracting the money supply; and, if reversed, expand the money supply. Since the 1970s, monetary policy has generally been formed separately from fiscal policy. Even prior to the 1970s, the Bretton Woods system still ensured that most nations would form the two policies separately

2.2.1 Economic theory

Economic theory and empirical evidence in bringing about these changes—in particular, changes in policy formulation. Because the organization exists in a complex competitive environment, it requires directors who can bring resources and skills to an organization to give it competitive advantage. According to the theory, directors can be classified in to four categories: insiders, composed of former and present executives that provide expertise in specific areas of the firm itself as well a general strategy and direction; business experts who provide expertise on business strategy, decision making and problem solving; the support

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specialists are those who provide support in specialized fields such as banking, law. insurance **or public** relations, and the community influential who are usually politicians, clergymen, **university** faculty members, leaders of social or community organizations.

2.2.2 Monetary theory

Monetary theory provides insight into how to craft optimal monetaiy policy. Monetary' policy rests on the relationship between the rates of interest in an economy, that is the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic growth., inflation, exchange rates with other currencies and unemployment. Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate (to achieve policy goals).

It is important for policymakers to make credible announcements. If private agents (consumers and firms) believe that policymakers are committed to lowering inflation, they will anticipate future prices to be lower than otherwise (how those expectations are formed is an entirely different matter; compare for instance rational expectations with adaptive expectations). **If** an employee expects prices to be high in the future, he or she will draw up a wage contract with a high wage to match these prices. Hence, the expectation of lower wages is reflected in wage-setting behavior between employees and employers (lower wages since prices are expected to be lower) and since wages are in fact lower there is no demand pull inflation because employees are receiving a smaller wage and there is no cost push inflation because employers are paying out less in wages.

rhis theory views the rational expectations onslaught was primarily theoretical in origin, but the upsurge of the RBC movement can be viewed as principally empirical. Here the point is that RBC models are in essence equilibrium business cycle models of the type promoted by **Lucas** (1972a, 1975) but with the monetary shocks eliminated and technology shocks emphasized. And this change in emphasis came about, it can be argued, largely because empirical analysis of various types suggested that the cyclical real effects of monetary policy **shocks** were very small in relation to the overall variability of output and employment. Some **crucial** studies providing such evidence were Sims (1980), Litterman and Weiss (1989),

Eichenbaum and Singleton (1986), Nelson and Plosser (1982), and Kydland and Prescott (1982).

2.3 Review of empirical studies

Rose (2000), and Rose and Van Wincoop (2001), among others, have emphasized this trade channel. Other authors, however, have voiced skepticism regarding the alleged positive effects of dollarization on growth and overall macroeconomic performance.

According to Eichengreen (2001) the evidence on the relationship between monetary regimes and growth is inconclusive, and does not support ihe claim that dollarization or any exchange rate regime, for that matter is an important determinant of growth. The traditional view, on the other hand, is that in countries with a hard peg it is difficult to accommodate external shocks, including terms of trade and world interest rate disturbances. According to him, this will be translated into greater instability and lower economic growth (Fischer 1976). And Frankel (1999) has argued that there is no unique recipe on exchange rate policy; while some countries will benefit from hard pegs, for other countries a tloating regime will be more appropriate.

Surprisingly, until very recently there have been no formal empirical studies on the relationship between dollarization and monetary policy in Liberia. In particular, international comparative studies on alternative exchange rate and monetary regimes have traditionally ignored dollarized countries. For instance, the comprehensive study on exchange rate regimes, growth, and inflation by Gosh ct al (1995), does not include nations that do not have a currency of their own.

Likewise, the IMF (1997) study on alternative exchange rate systems excludes dollarized countries, and the recent paper by Levy- Yeyeti and Sturzenegger (2001) on exchange rates and economic performance excludes nations that do not have a central bank. This lack of empirical evidence means that countries that are contemplating dollarization have very little iniormation on how other countries have historically performed under this monetary regime. [n] fact, most existing evidence on dollarization is based on the experience of Panama, a country that has used the US dollar as legal tender since 1904.

Kamin and Klau (1998) find similar results for a sample of 27 developing and industrialized **countries.** More recent contributions focus on financial factors arising from currency mismatches that turn real devaluations contractionary. These papers argue that balance sheet effects are the cause of the contractionary effect of devaluations in emerging countries since the 1990s. In short, a depreciation in the real exchange rate, increases the value of financial obligations in foreign currency vis a vis the value of revenues in domestic currency, causing liquidity and solvency problems that hinder growth possibilities for firms.

Regarding country case studies, Amman and Bacr (2003) contend that Brazil's devaluation in 1999 had a positive growth effect, as some analysts claim in regard to the post-2001 crisis Argentine experience. In contrast Bonomo et al (2003) find that in firms with high liability dollarization those results are reversed. Dotnac (1997) reaches the same conclusion looking at the Turkish economy over 1960-1990.

According to Yeyati (2003), dollarization exhibit two advantages on the monetary policies front. First, dollarization helps developing countries providing a firm commitment to stable monetary and exchange rate policies by forcing a passive monetary; that is, adopting a strong foreign currency as legal tender helps eliminate the inflation-bias problem of discretionary monetary policy. Secondly, official dollarization also imposes stronger financial constraint on the government by eliminating financing of the deficit by issuing money. Alesina and Barro (2001) established that inflation has been significantly lowei in dollarized nations than in non-dollarized ones. The expected benefit of dollarization is the elimination of risk of exchange rate fluctuations and possible reduction in the country's international exposure. I hough dollarization cannot eliminate the risk of an external crisis, it provides steadier markets as a result of elimination of fluctuations in exchange rates (Andrew and Borensztein, 2000).

However, dollarization leads to the loss of seigniorage revenue (profits when the monetary **authorities** issue its currency), the loss of monetary policy autonomy, and the loss of the **exchange rate** instruments (Andrew and Borensztein, 2000). According to Andrew and **Borensztein, when adopting** a foreign currency as legal tender, the monetary authorities need **jto withdraw its** domestic currency and give up future seigniorage revenue. Dollarization **makes the country loss** the rights to its autonomous monetary and exchange rate policies even [In] **times of financial** emergencies (Bencivenga and Huybens, 2001). De Zamaroczy and Sa j(2003) **states that the** most important challenge associated with dollarization is the loss of

effective control over monetary policy. The small domestic currency component of the **monetary** base makes it difficult to control monetary growth, which reduces the effectiveness **of monetary** policy as a tool to stabilize the economy. In addition, it lowers seignorage, given **that only** a **portion of the** monetary **base** is in local currency; lowers international reserves, **because** when transactions are conducted in the foreign currency, the central bank **accumulates** less of that currency as reserves; leads to loss of an effective exchange rate **policy the** authorities cannot manage the exchange rate **in** response to exogenous shocks, so **that adjustment** through the real economy will be necessary'; loss of the lender of last resort lole to a financial sector that holds large amounts of foreign currency deposits; public and private sector balance sheet vulnerabilities due to excessive dollarization of liabilities; and, **larger output fluctuations** since adjustments to external or domestic shocks would require **nominal** price and wage flexibility.

In a full dollanzed economy, exchange rates are indeterminate and the monetary authorities can **not** devalue. **In** a highly dollarized economy, devaluation policy is less effective in achieving changes in the real exchange rate because of having a high degree of pass-through effects to domestic prices (Andrew and Borensztein, 2000) However, the cost from losing an independent monetary policy exists when the domestic monetary authorities can commit an effective countercyclical monetary policy stabilizing the business cycle. This cost depends adversely on the correlation between business cycle of the client country (dollarized economy) and business cycle of the anchor country. In addition, the monetary authorities m **dollarized** economies diminish the liquidity assurance to its banking system (Alesina and **Barro,** 2001).

Recently, many empirical studies resort to micro-level data to assess the impact of real **exchange** rate depreciations in the presence of currency mismatches. 'These studies have **analyzed** the impact of real exchange rate fluctuations on the dynamics of investment and **employment.** Bleakley and Cowan (2002) use a sample or 480 firms from five Latin **American** countries (Argentina, Brazil, Chile, Colombia and Mexico) during 1991-1999, to **test** if **real** exchange rate devaluations have influenced investment decisions. They do not find **conclusive** evidence regarding a contractionary effect of exchange rate depreciations on investment.

Further country specific work summarized by Galindo et al. (2003) find different results. In a StUuy ()l Mex»can firms, Pratap el ai (2003) find that exchange rate depreciations have a

negative effect on firm performance, measured using the investment rate. This result confirms **previous** research on Mexico by Aguiar (2005) and Martinez and Werner (2002). Carranza et **al (2003),** Galiani et al (2003), Echeverry et al (2003), and Benavente et al (2003) find similar **results** for Peru, Argentina, Colombia and Chile, respectively.

In a study analyzing the effect of real exchange rate depreciations on employment in the **presence** of liability dollarization, Galindo., Izquierdo and Montero (2005) use a panel dataset **on industrial** employment and trade for 9 **Latin** American countries, and find that real **exchange** rate depreciations impact employment growth positively in countries with high trade openness, but this effect is reversed as liability dollarization increases. In industries **with high** liability dollarization, the overall impact of real exchange rate depreciations is negative.

2.4 Dollarization and monetary regulation

Against this background, Balino et. al (1999) test for currency substitution (versus asset substitution) by checking whether foreign currency assets help monetary aggregates to better forecast inflation developments. Their results vary significantly across countries. In the same vein, Berg and Borensztein (2000) examine the experience of five dollarized countries, namely, Argentina, Bolivia, Peru, Philippines and Turkey and ask which monetary aggregates appear to have the closest connection to future inflation.

They find thai a broader monetary aggregate that includes foreign currency deposits is superior to one that does not. They also test whether the reason is their function of means of payment, as argued by Balino et. Al (1999), but find contrary evidence in as far as foreign currency cash in circulation, as such, does not improve the forecasting power of narrow monetary aggregates.

Unlike the monetary targeting, inflation targeting does not require a stable relationship between money and inflation. However, dollarized economies have a number of disadvantages that may impinge on the conduct of inflation targeting and the achievement of **inflation** objective. Important disadvantages are the previously reported relatively higher exchange rate pass-through on prices and the vulnerability of the economy to balance sheet effects. The former will reduce the monetary authorities' control of inflation the more so under a floating exchange rate. The latter may make the exchange rate flexibility required by **inflation** targeting disruptive and costly.

2.4.1 Dollarization and Fiscal Discipline

Generally, fixed exchange regimes are expected to impose fiscal discipline. Under fixed regimes, however, fiscal deficits could still be financed by arrears, credit from suppliers and contractors, loans from the domestic banking system, and other forms of domestic and external debt, effectively postponing the costs until the situation becomes unsustainable. Under flexible regimes, the costs of unsound policies arc immediately manifested through movements in the exchange rate and the price level.

Previous empirical research does not support the disciplinary effect under fixed regimes. Vuletin (2003) indicates that, based on an empirical analysis with a sample of 83 countries for the 1974-98 period, fixed regimes do not provide greater discipline, where there is originally no fiscal discipline and the authorities can find ways to finance a fiscal deficit. He furthei concludes that flexible exchange rates generate greater discipline because of the immediacy of the punishment associated with the unsustainable fiscal policy. Tornell and Velasco (1995) find that countries in CPA franc zone in Africa in the 1980s were notoriously slow in undertaking fiscal adjustment compared with other sub-Saharan African countries operating under flexible exchange regimes. In light of these findings, alleged benefit of fiscal discipline under a fixed exchange regime was not confirmed. Further exploration would be required to verify whether the same view could be held for fully dollarized economy, as full dollarization is expected to have stronger disciplinary effect in the absence of any seignior age.

1 here is no denying that the Liberian economy is highly dollarized, and in Liberia, the U.S dollar reigns supreme, and has, and continues to enjoy super star status while the Liberian dollar is relegated to a despised step child status. The dual currency system has created two classes of citizens in Liberia, those who have access to the coveted U.S dollar, and those who not; and those who do not are the majority of the Liberian people; as a result, foreign mvestors, NGOs, Liberian and foreign business owners, and even the average Liberians have ver>' little confidence in the Liberian currency. The Central Bank's fourth quarter "Financial and Economic Bulletin" revealed that the U.S dollar accounts lor 68 1% of Liberia's total **money** supply, while the Liberian dollar accounts for 31 9% of the total money supply. **According** to a 2005 CBL monetary policy document, 80% of the currency in circulation is L |
  10 outside of the banking system, which makes intervention from the central Bank in

stabilizing the exchange rate near impossible. According to a working paper published by the International Monetary Fund (IMF), since the devaluation of the Liberian dollar, it has **depreciated** on average **by** five percent a year. As of June **1, 2009,** the Liberia dollar is trading **against the** US **dollar at a ratio of** 70:1, **with the** average commercial lending rate listed by the **Central Bank** of Liberia at **14.30%** as of April **2008,** and an overall inflation rate of **9.4%** at **the end of** December **2008.** However, the **2008** fourth quarter inflation rate for food and **beverages** stood at **18.4%,** about twice the national average. (IMF working paper **2009)**

2.4.2 Dollarization and Monetary Policy

The parallel circulation of a foreign currency, either as means of payment or as store of value, **is** bound to affect the conduct of monetary policy and. ultimately, the inflation outcome. The theoretical literature does not offer a clear answer as to how dollarization may affect monetary policy. The base case in point is probably the model by Cowan and Do (2003) where dollarized liabilities can, on the one hand, help correct a devaluation bias, by creating a **disciplining** effect on the Central Bank but also put the economy in a dollarization trap when information is imperfect. In fact, a benevolent Central Bank that lacks credibility may face **high** levels of dollarization, making a stabilization monetary policy hard to implement and **credibility** very costly to build. As a matter of fact, emerging countries are generally subject to imperfect information so that the model is tilted towards dollarization being a burden for monetary policy. However, given the differences across countries, it seems useful to analyze **the issue** empirically.

!n this section, we first assess how dollarization may affect inflation, and in particular the pass-through from the exchange rate to prices. Second, we review how it may influence the ell'ectiveness of monetary policy, particularly as concerns the stability of money demand..

2.4.3 Monetary policy and inflation

As already mentioned in the introduction, dollarization typically has been a reaction to economic instability and high inflation. That has also been the case in most of the highly dollarized economies from our sample. In Argentina, Bolivia, Uruguay or Vietnam for example inflation reached over 300 percent in the late 1980s. In Cambodia inflation exceeded 100 Percent in the beginning of the 1990s. However, the fact that over the last decade

inflation has decreased dramatically, does not seem to have led to significantly lower dollarization. All together, the relationship between inflation and dollarization is far from clear. Though the average inflation rate in highly dollarized economies is consistently larger than in less dollarized economies, it is difficult to argue that dollarization litis been an impediment in stabilizing inflation, as fhe latter has been decreasing in most dollarized countries and has reached one digits levels in the most recent period.

2.4.4 Monetary policy effectiveness

A common view among economists is that dollarization makes monetary policy more complicated and less effective. In large part this view can be attributed to theoretical results from the early literature on currency substitution. The latter showed that dollarization might increase the volatility of money demand due to the reduced costs of switching from domestic to foreign currency holdings in order to avoid the effects of inflation. A side effect of this is that currency substitution should also increase the exchange rate volatility (if the exchange rate regime allows). Calvo and Vegh (1992, 1996) for example show that there is a strong positive correlation between currency substitution and exchange rate volatility. A higher exchange rate volatility results also from the fact that currency substitution makes the exchange rate more responsive to expected changes in domestic money supply and other factors that affect the money market

While this concern came originally from the assumption that the demand for foreign currency reflects essentially a search for a second means of payment, a similar argument could be made regarding the dollarization as an asset substitution phenomenon: As the flight to readily available foreign currency assets becomes less costly, the demand for a store of value in a dollarized economy can be expected to be more responsive to a monetary expansion or to a change in the exchange rate. Hence, the inflation response of monetary shocks should be stronger in dollarized economies.

Levy Yeyati (2004, 2006) does, in fact, find that the elasticity of the inflation rate to a monetary expansion increases significantly as dollarization deepens. He emphasizes, however, that there can still be some scope for monetary policy. In fact, a more intense price response to monetary shocks, implicates that a reduction in the rate of money growth would have a stronger stabilizing outcome.

2.4.5 Conducting monetary policy

A key issue that lias to he resolved when talking about monetary policy is which intermediate **targets** of monetary policy to choose. Traditionally, intermediate targeting has implicated a pre-announced exchange rate rule or a target on a monetary aggregate. Under the exchange rate rule, monetary policy is very restricted. The monetary authorities stand by to intervene in the foreign exchange market in order to maintain the exchange rate at its pre-announced level or range; the exchange rate serves as a the nominal anchor.

Recently more and more countries have started to adopt explicit inflation targeting as a strategy for conducting monetary policy. This involves: a) the public announcement of numerical targets for inflation; b) an institutional commitment by the monetary authority to price stability as the primary goal; c) information on the mix of instruments chosen to achieve it; d) increased communication with the public about the monetary policy strategy; and e) the monetary authority's accountability regarding the inflation objectives. Decisions on monetary policy are, then, taken based on the deviation of forecasts of future inflation from the announced target. In other words, the inflation forecast basically serves as the intermediate target of monetary policy.

In the following we look at the implications of dollarization for the conduct of monetary policy. There are different issues depending on the monetary policy strategy chosen. In case ot a monetary aggregate anchor, an important question is whether foreign-currency assets should be included in the monetary aggregated targeted. If the main criterion to choose the monetary aggregate to target is its influence on the price level through transaction demand for money, currency substitution would justify that foreign currency denominated monetary assets are part of that definition. At the same time, the accumulation of foreign-currency assets lor the store of value, rather than means of payment function of money, would not call for including foreign-currency denominated assets in the monetary aggregate that central banks decide to target.

In spite of these concerns, Peru, a highly dollarized economy, has adopted inflation targeting. '-eidennan et al. (2006) analyze the challenges faced by Peru compared to no dollarized inflation targets and come to the conclusion that high dollarization per sc does not rule out the USC inflation targeting as an effective policy arrangement. Regarding the "fear of floating'

phenomenon faced by highly dollarized economies, the authors argue that "leaning against the wind" interventions on the foreign exchange market are consistent with, and even conducive, to inflation targeting. Moreover, they find that switching to inflation targeting in Peru has resulted in a lower exchange late pass-through on prices, and a higher pass-through of the policy interest rate on banking rates. It should, however, be noticed that the design and implementation of inflation targeting in Peru differs substantially from a non-doilarized environment Annas and Grippa (2006).

The differences in the implementation have to do with the inflation forecasting system and the monetary' authorities' responses for coping with dollarization risks. As stated bv the authors, one possible response could be to reduce a country's vulnerability to large exchange rate depreciations by promoting de-dollar ization. Due to the "fear of floating" phenomenon, dollarized economies often tend to choose the exchange rate as their nominal anchor. This however, implicates two major problems.

2/> Chapter summary

There is evidence from the various empirical studies reviewed that efficiency policy scores indeed significantly play a very active role in promoting markets in financial derivatives and other instruments to insure against exchange rate risk. As regards monetary policy, the Bank of Israel is probably the first emerging country to have introduced inflation targeting, which has been shown to anchor expectations and, thereby, reduce investors 'uncertainty about local currency assets.

Although there was no direct attempt to de-dollarize the economy, since the early 1990s an active policy was conducted in this direction when deciding on the currency composition ot public sector issuance. In fact, a conscious effort was made to deepen the market for local **currency** denominated government bonds. This has obviously come at a cost, in terms of higher interest payments paid by the public scctor particularly in a period of high real interest **rates** However, the costs have been reduced year after year as the disinflation program **started** bearing fruit and inflation finally reached single digits. Apart from "nominalizing" the **debt** -first through CPl-indexation and later without any indexation   Israel has also **lengthened** the maturity of its public debt. This points that there is not necessarily a trade-off between currency of composition and the maturity of public debt.

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is about the research methodology followed in order to realize the objectives of the study. The study uses a survey of the variables under study done by matching estimators for inflation, growth and growth volatility of the Liberian banks under study. The data will be **available** from secondary sources. Multivariate analysis was used to determine if a relationship exists between the variables. The chapter outlines the research design, data sources, data collection method, and research procedure and data analysis technique and concludes with a summary.

3.2 Research Design

The research design method uses descriptive in nature. According to Cooper and Schindler (2000), descriptive statistics discover and measure cause and effect relationships among variables. The study uses a descriptive design because it enables the researcher to collect in-depth information about the population being studied.

3.3: Population

The population of this study comprises the 9 commercial banks which have been operating in Liberia and the Central Bank of Liberia. Namely Liberia Bank for Development & Investment (LBDI), Ecobank Liberia Limited (ELL), International Bank Liberia Limited (IBLL), First International Bank (FIB), Guarantee Trust Bank, Global Bank Liberia Limited, and United Bank of Africa (UBA).With this the study established the relationship between dollarization and monetary policy. According to the central Bank Supervision Report (201 I) there are nine commercial banks operating in Liberia. However, one of the banks in under statutory management. All the banks will be surveyed. The study period was cover five years as from 2007-2011.

3.4: Sampling

The survey uses a census. Thus the entire population was considered for the research. The **entire** population was taken into account and as such it is most accurate. According to Mugenda and Mugenda (2008) Census refers to collection of information about the populace **from the** entire population.

3.5: Data Collection Method

The study uses secondary data. According to Mugenda and Mugend (2008) Secondary data are cheaper and more quickly obtainable than the primary data and also may be available vvhen primary data cannot be obtained at all. The researcher uses any of the Liberia banks publication, journals, annual reports, statements which shows Total banks deposit, USD component of total bank deposits, LID component of total deposit, Exchange rate LID : USD, Consumer price index, Purchase power of the Liberian dollars (a function of the consumer price index and indication by the depreciation or appreciation of the exchange rate) hence the degree of dollarization (a function of the percentage composition of the USD vis-a - vis the total bank deposits. Thus the research gathers all the secondary data concerning the monetary policy and dollarization in Liberia

3.6: Data analysis

A multivariate regression model was applied to determine the relative importance of each of the six variables in relation to the study which sought to understand the influence of different factors as a result of dollarization and monetary policies on the banks performance. The regression model is as follows: A multiple regression model was applied to determine the relative importance of each of the four variables in relation to the study which sought to understand the influence of different factors as a result of dollarization and monetary policies on the banks performance.

3.6.1 Measurement of The Relationship between dollarization and monetary policy

The study relies existing rules of scientific methods and utilizes existing techniques. In using existing scientific methodology in this study, it is certain that the major goal of the research project is achieved.

I he model for the multiple regression analysis and its interpretation:

$y^\wedge + fhxi + /hx_2 + Ci$

Where y, is the dependent or predictor variable, xjx2 independent variables, a is the intercept, PlP2 are the slopes, and 6', is the error term, which picks up the unpredictable part of the response variable v,. The error term is usually posited to be normally distributed, p, and (32 [are] unknown parameters ('constants') to be estimated from the data.

[in] this research however, the parameters had the following definitions of expressions:

$_a$ = Regression Coefficients (to be estimated) measures how much units of Dollarization Index (DI) and Monetary Policy (MP) changed with a unit change in the above independence variables.

Regression Coefficients estimated measure how much units of DI and MP changed with a unit change in any of the independence variables. Most applications of regression models assume that all data used to construct the mode! and all data input to the model in production arc accurate.

The research used the Statistical package for Social Sciences (SPSS) to estimate the result of the correlation between the variables.

Multiple regression analysis was used in drawing correlation between the dependents and independence variables. In (his research there are two dependent variables with several independent variables.

One of the dependent variables is dollarization which has four independent variables including:

- Domestic (dram) currency in circulation or DCC

- Foreign currency deposits or FCD

- Effective broad money supply or EBM

- Foreign currency in circulation or FCC

- Therefore Dollarization Index DI=f (DCC+FCD+EBM+FCC)

Monetary policy is another dependent variable which depends on four main independent variables including- Exchange Rates or ER, inflation, price stability or PS and Banking Sector reform of BSR.

Model used to show the relationship between Dollarization Index which is one of the dependent variables and four independent variables and also Monetary Policy along with four '"dependent variables.

$^{Y:=}f(H, S, u,)$ . .. .- . . . .- 1 .

y= f(DCC+FCD+EBM+FCC) _____ **2.**

Monetary policy is be represented by X and the model used the relationship between Monetary Policy, the other dependent variable and three main independent variables including:

- Exchange rate or ER

- **Inflation or I**

- Price stability or PS

- Banking sector reform or BSR

For the second dependent variable monetary policy

X=f(ER, I, PS, BSR)

Therefore the model will be combined as follows:

Y= f (DCC+FCD+EBM+FCC) + X= f (ER, I, PS, BSR)

3.7 Reliability and Validity of the Instrument

Reliability can be referred to as the degree to which a research instrument can be depended upon or yield consistent results after a repeated trial (Mugenda and Mugenda (2003). It enhances accuracy, clarity and adequacy of the instrument, (Bennet, 1999). To test reliability a researcher may use test-retest method. This involves administering the same instrument twice to the respondents in a lapse of one week, and then the results was checked if it correlates using correlation coefficient. The higher the correlation co-efficient the higher the test-retest reliability. For the purpose of this study, data was collected from recognized and official sources of Government of Liberia, the Central Bank of Liberia.

Validity can be referred to as the accuracy and meaningfulness of inferences which arc based , ^{on} research results. (Mugenda and Mugenda (2003). The instrument is said to be valid when •1 measures **what** it purports to measure For instance, if the outcome from the results analysis °fthe pre-test data reveals the intended purpose, then the instrument is said to be valid. The ^{pi,ot} study assisted the researcher to identify items in the instrument which might be

biguous and difficult hence the use **of** standardized graph. Amendments will be made on ic instrument in order to improve the quality and validity

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Chapter Four

Data Analysis and presentation

4.1 Introduction

This chapter contains analysis and presentation of data collected for the project. Data were collected on the two independent variables monetary policy and dollarization and the dependent variables, Domestic Dram Currency in Circulation, Foreign Currency Deposits. Effective Broad Money, Supply, foreign Currency in Circulation, Exchange Rate, Inflation, price Stability and Banking Sector Reform. The data on the variables were collected from the website of the Central bank of Liberia, specifically; annual reposts of the CBL ranging from 2007-2011.

The data arc analyzed and presented in two categories based the number of dependent variables versus each of the two independent variables. Eiach dependent variable is separately analyzed along with public independent variable determine their various relationships.

The data cover live year period (2007-2011). Data on monetary policy which is represented by the overall broad money (average of both Lioerian and United States dollars in circulation) and the independent variable exchange rate is represented in Table I. Inflation, another independent variable is compared with the dependent variable, on monetary policy in Table 2. The respective scatter plots and their corresponding regression results are indicated in tables 3 and 3.1.

It is also important to note that the data were analyzed using Microsoft excel regression tool. The results reflect the exact output of the analysis of data disclosed in the tables

4.2 Analysis, Presentation of Data and discussion of findings

4.2.1 Monetary Policy and Exchange Rate

Table 1: Relationship Between Monetary Policy* and Exchange Rate		
Year	Broad Money	Buying Rate
2005	6,361.90	56.51666667
2006	8,548.80	57.445
2007	11,977.10	60.7725
2008	16,142.40	62.7275
2009	22,855.40	67.81083333
2010	31,103.90	70.90666667
2011	39,823.00	71.78

Date Source: Central Bank of Liberia

Figure 1.0 Scatter plot of Monetary Policy and Exchange Rate

Buying Rate

$y = 0.000x + 54.43$
$R^2 = 0.941$

- Buying Rate

Linear (Buying Rate)

80
70
60
50
40
30
20
10

0.00   10,000.00   20,000.00   30,000.00   40,000.00   50,000.00

,ble2 Regression Results showing the Relationship between Monetary Policy and Exchange Rate

SUMMARY OUTPUT

Agression •*Statistics*								
(ultiple R	0.97007749							
(Square	0.941050337							
ijusted R uare	0.929260404							
indard ror	1.660114143							
nervations	7							
	-							
JOVA								
	Of	SS	*MS*	*F*	Significance *F*			
gression	1	219.9771	219.9771	79.81813	0.000293			
sidual	5	13.77989	2.755979					
tal	6	233.757						
	(Coefficients	*Standard Error*	*/ Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*1 Jpper*
ercept	54.43364059	1.240508	43.88012	1.16E-07	51 24481	57.62247	51.24481	57.
Variable /	0.000489164	5.48E-05	8.934099	0.000293	0.000348	0.00063	0 000348 **j**	0

As 'ndicated in the table above, it is established that dollarization and monetary policy have [nc]gative relationship with exchange rate with a correlation coefficient 0.32890945 or 32 Reason for this kind of relationship can be backed by the observation noted by John Van ^'ekle (2001) who found out that long a topic of heated debate among economists, exchange [ra]*e policy has enjoyed particular popularity since the 1997. Asian crisis when one fixed rate

regime after another collapsed under balance of payments problems and the resulting contagion.

The slope and is given in the "$Coefficients$" column and the X Variable (MP) row. The slope, pi. measures the estimated change in Yj (exchange rate) as a result of a one unit change in MP (monetary policy). In the summary output table 1.1 above, exchange rate increases by approximately 6E-06 for every one point increase in monetary policy. The intercept, [3o, is given in the "$Coefficients$" column and the "Intercept" row. The intercept po is the estimated value of Yj (exchange rate) when Mp (monetary policy) is equal to zero. Multiple R - This is the correlation coefficient which measures how well the data clusters around the regression line. The closer this value is to 1, the more "linear" the data is. That is, monetary policy could be used to predict exchange rate. The closer the value is to 0, the lesser the relationship between the variables. If it turns out that the multiple R is 0, there is no linear relationship between the variables. The correlation coefficient depicted in the summary output is 0.97007749 or 97.0%.

R Square - This is the coefficient of determination. This measures the percentage of variation in the dependant variable that can be explained by the linear relationship between Mp and YW. That is, how accurate the linear regression model is at predicting the exchange rate based on levels of monetary policy. The summary output in the table 1.2 above puts R^2 at 0.941050337 or 94.1%.

4.2.2 Monetary Policy and Inflation

Table 3: Relationship Between Monetary Policy and Inflation		
Year	Broad Money	Inflation
2005	6,361.90	II.I
2006	8,548.80	7.4
2007	11,977.10	11.4
2008	16,142.40	17.5
2009	22,855.40	7.4
2010	31,103.90	7.5
2011	39,823.00	8.5

Date Source: Central Bank of Liberia

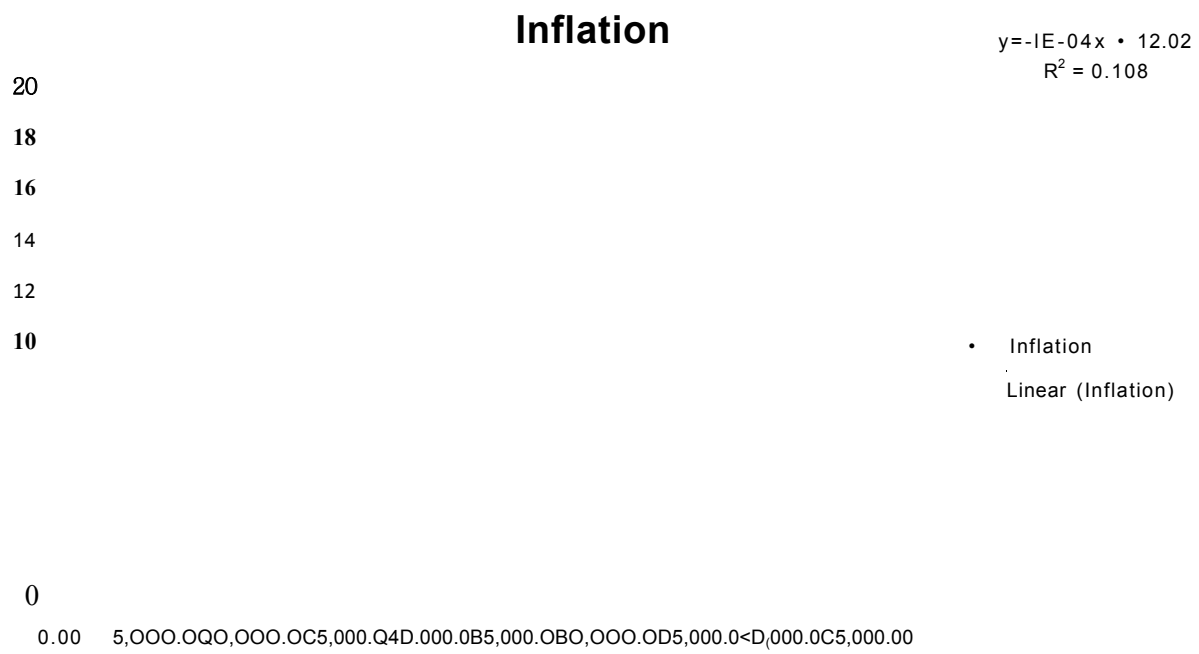**Figure 2.0 Scatter plot of Monetary Policy and Inflation Rate**

Inflation

y=-IE-04x · 12.02
$R^2 = 0.108$

20

18

16

14

12

10

· Inflation

Linear (Inflation)

0

0.00   5,OOO.OQO,OOO.OC5,000.Q4D.000.0B5,000.OBO,OOO.OD5,000.0<D(000.0C5,000.00

Table 3.1 Regression Results showing the Relationship between Monetary Policy and Inflation Rate

SUMMARY OUTPUT							
Regression Statistics							
Multiple R	0.32890945						
R Square	0.108181426						
Adjusted R Square	-0.070182288						
Standard Error	3.809151269						
Observations	7						
ANOVA							
	Of	SS	*MS*	*F*	*Significance F*		
Regression	1	8.800404	8.800404	0.606521	0.471332		
Residual	5	72.54817	14.50963				
Total	6	81.34857					
	Coefficients	*Standard Error*	*/ Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*
Intercept	12.0265345	2.84636	4.225233	0.008286	4.709732	19.34334	4.709732
X Variable 1	-9.784E-05	0.000126	-0.77879	0.471332	-0.00042	0.000225	"0 00042

As indicated in the table above, the *"Coefficients"* column and the X Variable (Mp) row. The slope,   measures the estimated change in Y_2 (inflation) as a result of a one unit change in X (monetary policy).   In the summary output in table 3.1 above, inflation increases by approximately 3E-06 for every one point increase in monetary policy.   The intercept, po, is given in the "*Coefficients*" column and the "Intercept"' row. The intercept (5o is the estimated value of Y_2 (inflation) when X (monetary policy) is equal to zero. Thus the regression ecluation that defines the relationship between monetary policy and inflation is: Y_2 (inflation)

= 3E-06 + 1.048 Multiple R - This is the correlation coefficient, which measures how well the data clusters around the regression line. The closer this value is to 1, the more "linear" the data is. That is, monetary policy could be used to predict inflation. If this value is close to 0, there is no linear relationship between our variables. The correlation coefficient is 0.32890945 or 32%.

R Square - This is the coefficient of determination. This measures the percentage of variation in the dependant variable that can be explained by the linear relationship between x and y. That is, how accurate the linear regression model is at predicting the inflation based on levels of monetary policy. The summary output in the table 2.1 above puts R^2 at 0.108181426.

4.3 Monetary Policy and Exchange Rate

For the year 2007, the exchange rate of the Liberian dollar vis-a-vis the United States dollar generally remained stable, fluctuating between L,$60.00 and LS63.00 to US$1.00 on average This indicates that the foreign exchange auction had some positive effects. The end-of-period exchange rate for 2007 was LS63.00 per US dollar while the period average was L$6I 27 to US$1 0 Table 4

During 2008, the average Liberian-US dollar exchange rate remained generally stable at L$63.5 per US$1.00 throughout 2008, with the buying and selling exchange rates fluctuating between LS61.00 and L$64.01 per US$1. The broad stability of the exchange rate can be attributed, in part, to the CBL's weekly foreign exchange auction and prudent Liberian dollar liquidity management by the Bank. The endOO (Table -of-period rate at end of December stood at I,$64.00 to US$1.00 while the period average rate was L$63.29 for US$1.00.

The Liberian dollar exchange rate came under enormous pressure during the most part of 2009, due largely to the global financial crisis and economic meltdown, which led to a eduction in the supply of US dollars to the economy, especially through the slowdown in workers" remittance inflows to Liberia and declines in export earnings. The average exchange rate of the Liberian dollar *vis-a-vis* the United States dollar depreciated by 7.1 percent to ^$67.81/US$1.00 at end-December, 2009, from L$63.29/US$1.00 at end-December, 2008.

Also, the end-of-period exchange rale for 2009 stood at L$70.50 per US dollar, from L$64.00 per US dollar at end-December, 2008.

The CBL increased intervention in the foreign exchange market through its foreign exchange auction helped to stabilize the exchange rate. During most part of the last half of 2009, the CBL increased the sales of US dollars by an additional amount of US$7.4 million which significantly contributed to the 6.1 percent appreciation of the value of the Liberian dollar with the exchange rate moving from LS72.75 per US dollar in August to LS63.31 per US dollar at end-December, 2009. On the overall, the exchange rate has remained broadly stable between LS60.00 and L$73.00 per US dollar for the last 3 years.

7 he exchange rate of the Liberian dollar relative to the US dollar remained relatively stable at L$71.00/US$l for buying and L$72.00/US$1.00 for selling in 2010. The broad stability in the exchange rate can be explained, in part, by the CBL's weekly foreign exchange auction. The amount of US dollars offered by the CBL through the auction increased by US$12.8 million to US$44.6 million at end-December,2010, compared with US$31.8 million offered in 2009. On average, the exchange rate depreciated by 5.3 percent, from L$67.81/US$1.00 at end-December, 2009 to L$71.40/US$1.00 at end-December, 2010, (Table 13 and Chart 7). The end-of-period exchange rate stood at LS71.50 per US dollar, from L$70.50 per US dollar for the same period of 2009.

4.4 Monetary Policy and Inflation

The rate of inflation for 2007 averaged 11.4 percent. At end-December, it was 11.7 percent. Excluding the food and non-alcoholic beverages, the rate was 6.0 percent. The inflationary pressure was pronounced mainly in domestic food, clothing, water, rent and transportation. **Domestic** Food **items recorded an** average **rate of** inflation of 25.80 percent, during the year. It contributed 4.20 percent to the overall average rate of inflation. T he rise in the prices of the food commodities was due to the escalation in the price of petroleum products on the world market, which contributed to the rise in transportation cost.

The inflationary situation in the economy was mainly driven by structural factors, including Poor condition of infrastructure, dilapidated state of farm-to-market roads, inadequate farm [In]Puts, concentration of some subsistence farmers on gold mining rather than on farming, and

the general shortage of some domestically-produced food items. Although exchange rate movements do have direct impact on inflation, the data for 2007 showed that while the quarterly rate of change in the exchange rates was moderately increasing, the quarterly rate of change in inflation was declining. The quarterly average rate of depreciation of the domestic currency was 6.6 percent, while the quartet!y average rate of change in inflation showed a decline of 6.2 percent for the same period. This development demonstrates the importance of the foreign exchange auction conducted regularly by the CBL in order to help stabilize the exchange rate.

The rate of inflation for 2008, as measured by the Harmonized Consumer Price Index (HPCI) averaged 17.5 percent compared with 11.4 percent in 2007. This sharp increase in inflation was driven mainly by price increases in the international market for food and oil. The poor state of infrastructure in the country and the low level of domestic food production also played a role in driving up the general price level during the year. Core inflation, defined to exclude hood and Transport items from the Consumer basket, increased by 0.8 percentage points to 4.7 percent at end-December, from 3.9 percent recorded at end-January of the year. The annual rate of core inflation averaged 6.0 percent, while the average rate of headline inflation stood at 17.5, indicating the enormous influence of oil and food on the general price level.

The inflationary pressure surged from a rate of 16.5 peicent in January and peaked at 26.5 percent in August, the highest level recorded during the year. The rise in the inflationary condition followed the marked increase in the prices of oil and food on the world market, but the situation eased during the last half of the year following a downward trend in the prices of oil and food on the world market. Moreover, the fall in inflation during the latter part of 2008 was partly an outcome of the dry season when inter-county and farm-to-market roads are more accessible to enable farmers to bring their produce to the market. At end-December, the rate of inflation stood at 9.4 percent (Tabic 5)

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In flat lonary pressures moderated in the 12-month period up to December 2.009 with consumer price inflation averaging 7.4 percent, from an average double-digit rate of 17.5 percent in 2008. The slowdown in the upward movement in general prices, characterized by

single-digit inflation in 2009, was influenced by the domestic pass-th^rough effects of the relative low oil and food prices on the world market.

The average rate of inflation as measured by the Harmonized Consumer Price Index (HC.PI) for
2010 was 7.5 percent, 0.1 percentage point higher than the average rate of inflation for 2009. The moderate increase in inflation was driven mainly by increases in the prices of domestic food and imported fuel to 6.2 percent and 19.6 percent, from -4.87 percent and - 25.6 percent, respectively. Vegetables & Fruits, Kerosene, Petrol and Diesel arc the major items in the consumer basket responsible for the increase. The poor state of infrastructure in the country and low level of domestic food production are other factors that accounted for the rise in the general price level during the year. Nonetheless, inflation remained in single digit.

Annual headline inflation for 2011 averaged 8.5 percent, up from 7.5 percent at end-
December, 2010. The gradual build-up of inflationary pressure was driven mainly by food and transport. Domestic food inflation for 2011 surged to 17.0 percent, from 6.2 percent in the same period of 2010, on account of the poor state of farm-to-market roads in the country. Transport inflation rose from 4.7 percent at end-December, 2010 to 18.2 percent at end-December, 2011 due mainly to the increase in the price of petroleum products. The average core inflation, defined as inflation excluding food and transport, dropped from
8.3 percent in 2010 to 4.0 percent at end-December, 2011.

4.4.1 Dollarization and Domestic Dram Currency in Circulation

For the base year, 2007, the currency in circulation in terms of Liberian dollars was L$3,102.4 **million** at end-November, 2007, a 10.3 percent increase compared to the level recorded at end-December, 2006. The change was mainly accounted for by the increase in currency in banks, from L$166.3 million at end-December, 2006, to L$244.8 million at end-November 2007. Currency outside banks increased from LS2,647.6 million at end of **December,** 2006 **to** LS2,857.5 **million at end**-November, 2007.

Money Supply or narrow money (Ml) was L$8,785.4 million at end-November, 2007. indicating a 32.7 percent increase over the level recorded in 2006. The expansion reflects CBL's response to the need for liquidity consistent with the growth of the economy and the goal of the Bank in building up its net foreign exchange reserves position. The increase was

largely accounted for by a 49.2 percent rise in demand deposits, from L$3,973.2 million at end December, 2006, to L$5,927.8 million at end-November, 2007 Table 6.

Liberian dollars in circulation at end-November, 2008 was L$3,767.6 million, increasing by 4.8 percent (or LS173.2 million), from L$3,594.4 million at end-December 2007. The increase was driven mainly by the 48.3 percent rise in currency in banks to L$410.7 million, from LS276.9 million at end of 2007. Currency outside banks also rose bv 1.2 percent to L$3,356.9 million for the same period. This development reflects growing public confidence in the banking sector and increasing service delivery to the public by the CBL, especially the payment of civil servants' salaries and arrears in all parts of the country during the last quarter of 2008.

Money supply (Ml), narrowly defined as currency in circulation plus demand deposits or checking accounts, totaled LSI 1,879.5 million at end-November, 2008 This stock of money supply represents 34.1 percent (L$3,020.3 million) rise over the level recorded at end-December, 2007. The increase was essentially a result of the CBL response to the need for providing services to the economy to help promote growth and development. The 53.8 percent growth in demand deposits to IJ>8,522.6 million at end-November, from L$5,541.7 million at end of 2007 was the major factor that propelled the increase in money supply.

In 2009, Liberian dollars in circulation in the 11-month period up to November, 2009, totaled L$3,930.9 million, representing a decrease of 3.9 percent, from L$4,090.0 million at end-Deccmber 2008. The decrease in Liberian currency in circulation can be mainly attributed to a 21.0 percent decrease in currency in banks, from LS452.9 million at end-December, 2008, to I.$357.8 million at end-November, 2009.

hi the I 1-month peiiod up to November, 2009, Money Supply (Ml), narrowly defined, amounted to L$ 15,863.0 million, representing a 24.4 percent increase over the L$ 12,748.0 million recorded for 2008. The expansion in money supply demonstrates the CBL's response to the need for additional liquidity in the system to facilitate the level of economic activities currently taking place in the economy. The 34.9 percent rise in the level of demand deposits to LSI 2,290.0 million at end of November of the review period, from L$9,l I 1.0 million at end of 2008, was the major driving force behind the expansion in money supply. Also, quasi

money or time & Savings deposits rose by 41.7 percent to LS5,[1]926.0 million, from L$4,183.0 million at end 2008.

At end-November, 2010, Liberian dollars in circulation 1 totaled Ii>4,910.3 million, representing an increase of 7.1 percent from LS4,583.4 at end-December, 2009. Of the total amount in circulation, currency in banks accounted for LS573.3 million (or 11.7 percent) while currency outside banks accounted for L$ LS4,337.0 million (or 88.3 percent). The rise in Liberian dollars in circulation can mainly be explained by the 36.0 percent increase in currency in banks, from
L$421.6 million at the end of 2009 to L$573.3 million at end-November, 2010. During the period, money supply (Ml)2 totaled L$ L$ 19,805.1 million, rising by 17.6 percent over the L$ 16,847.8 million reported at end-December, 2009. The 21.9 percent increase in demand deposits, from L$ 12,686.0 million at end-December, 2009 to L$15,468.1 million at end-November, 2010 was the major factor responsible for the increase. The expansion in money supply (Ml) was in response to the need for liquidity in the system to help facilitate the growing economic activities taking place in the economy

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At end-November, 2011, Liberian dollars in circulation! amounted to L$6,534.0 million, representing an increase of 17.7 percent, from L$5,550.6 million at end-December, 2010. Of the total currency in circulation, currency outside banks accounted for 92.2 percent while currency in banks constituted 7.8 percent, indicative of the need for greater domestic saving mobilization by banks. The rise in Liberian dollars in circulation was driven by a 20.3 percent, increase in currency outside banks, from L$5,007.9 million at end-December, 2010, to L$6,022.4 million at end-November, 2011. Meanwhile, currency in banks fell by 5.6 percent to L$512.4 million at end-November, 2011, from L$542.6 million at end-December, 2010.
In the 11-month period to November 2011, money supply (Ml)2 stood at LS28J48.7 million, representing a growth of 21.3 percent over the L$23,212.7 million reported at end-December, 2010. The expansion was driven by a 21.5 percent increase in demand deposits, from
' U>18,204.7 million at end-December, 2010 to L$22,126.3 million at end-November, 201 i [ar]d a 20.3 percent rise in currency outside banks, from L$5,007.9 million to L$6,022.4 **Million** at end-November, 2011. The expansion in money supply (Ml) was in response to the [n]eed for liquidity in the system to facilitate the growing economic activities taking place in [the] economy.

4.4.2 Dollarization and Foreign Currency Deposits

During the five year period under study, the Central Bank of Liberia annual reports published for the period did not indicate the total foreign currency deposits. Only remittances from foreign sources were reported.

4.4.3 Dollarization and Effective Broad Money Supply

In 2007, Broad Money or M2 (Ml plus quasi money) rose by 38.8 percent to L$l 1,863.8 million at end November 2007, moving from LS8,548.8 million at end-December, 2006. Quasi money, which includes savings and time deposits, rose by 59.7 percent, from L$ 1,928.0 million at end-December, 2006, to L$3,078.4 million at end-November, 2007 Table 7.

Unlike 2006 when the increase in quasi money was mainly on account of a rise in savings deposits, both savings and time deposits increased in 2007. Savings deposits expanded from LSI,830.4 million at end December, 2006, to L$2.654.7 million at end-November, 2007; time deposits moved from LS97.6 million to LS423.7 million for the same period. These developments suggest a broad indication of the rebuilding of confidence in the banking system.

For 2007, the Liberian Dollar component of broad money totaled L$4,271.5 million. The Liberian dollar component rose by 23.0 percent, from L$3,473.4 million at end-December, 2006 to L$4,27l.5 million at end-November, 2007. The US dollar component, converted at an end-of-period exchange rate of L$59.50 per US dollar, expanded by 49.6 percent to LS7,592.3 million at end-November, 2007, from L$5,075.4 million at end-December, 2006.

In 2008, Broad money (M2) comprising Ml plus quasi money (time and savings deposits) **totaled** L$ 16,142.4 million at end-November, 2008 — reflecting a 34.8 percent (L$4,165.3 **million)** increase over the level recorded at end-December, 2007. The surge in broad money Was **driven largely by a 46.5 percent rise in savings deposits to** L$3,902.6 million **at end** of **November,** 2008, **from** L$2,664.3 million at end-December, 2007. The 36.7 percent increase ,n quasi money to L$4,262.9 million at end of the year under review, from L$3,l 18.0 million [at] **end** of 2007 **demonstrates** the regaining of public confidence in the banking sector and the [ne]**ed** for concerted efforts **by** the banks and the judiciary to ensure loan recovery, which could

encourage banks to increase lending to various sectors of the economy, reducing the excess liquidity and improving financial intermediation.

In 2009 Broad Money or M2 (Ml plus quasi money) rose by 2.8 7 percent to L$21,789.0 million in the 11-month period up to November 2009, from L$16,931.0 million at end-December, 2008.The
growth in broad money during the period was driven by increases in both net foreign and net domestic assets of the banking system Net foreign assets (NFA) of the banking sector rose by
9.4 percent while net domestic assets (NDA) grew by 14.8 percent in the 11-month period. The rise in NFA was largely on account of reserves build-up by the CBL and increase in the holdings of Special Drawing Rights (SDRs) of the country through a special SDR allocation by the IMF. Also, during the period, the increase in NDA was occasioned by increases in crcdit to the private sector by 45.2 percent and 7.4 percent rise in credit to Government from the use of the IMF credit & loan facility as provided for under the PRGF Program

Reserve money slightly rose by 4.1 percent, from L$ 12,319.0 million at end-December 2008, to LSI2,819 million for 2009. The growth in reserve money was mainly due to increase in banks reserves by 6.5 pcrcent. In terms of percentage share of broad money, the US-dollar component accounted for 71.5 percent while the Liberian dollar portion constituted 28.5 percent for 2009. The US dollar share of broad money increased by 35.2 percent, from LSI 1,526.1 million at end-December, 2008, to LSI5,578.7 million at end-November, 2009, while the Liberian dollar component expanded by 14.9 percent for the same period. This large share of US dollars reflects the high degree of dollarization of the economy.

During the period 2010, broad money (M2)4 rose by 25.4 percent, from L$22,855.4 million at end-December, 2009 to LS28,652.0 million at end-November, 2010. This is lower than the 36.7 percent growth recorded in 2009. The slower growth in broad money followed a 143.5 percent reduction in Net Foreign Liability (NFL), largely on account of debt waiver by the international community following Liberia reaching the HPIC Completion Point in June of 2010. This is reflective of the 125.9 percent reduction in Central Bank's foreign liability. Also, there was an

88.1 percent fall in Net Domestic Asset (NDA) as a result of an 84.1 percent decline in net claim on Government, which was due to the ongoing repayment of domestic debt by the Government.

Reserve money, in the 11-month period, rose by 22.5 percent, from LS 14,743.0 million at end-
December, 2009 to L$ 18,064.0 million, at end-November, 2010. The growth was driven mainly
by a 29.7 percent increase in commercial banks' reserves, from L$10,581.2 million at end-
December, 2009 to L$13,727.0 million at end-November, 2010.

During the period, broad money (M2)4 or overall liquidity grew by 28.0 percent, from L$31,103.9 million at end-December, 2010 to L$39,823.0 million at end-November, 20! I. The rise in broad money followed the 21.3 percent and 47.9 percent growth in Ml and quasi money, respectively. In terms of sources of broad money supply, the 131.1 percent increase in net domestic assets (NDA) largely explained the growth in overall liquidity (Table 9 & Chart 6). The growth in overall money supply was mainly driven by the expansion of credit to the private sector in support of economic growth and development.

Reserve money at end-November 2011 rose by 32.5 percent to L$25,535.5 million, from L$19,275.4 million at end-December, 2010. The increase was driven predominantly by a 36.8 percent rise in commercial banks' reserves, from L$ 14,267.5 million at end-December, 2010 to I S 19,513.1 million at end-November, 2011. The US dollar share of broad money stood at 72.7 percent while the Liberian-dollar component accounted for 27.3 percent during the review period. The US and Liberian dollar shares of broad money remained largely stable between 2009 and 2011. However, the US dollar share is remained high, reflecting the dollarized nature of the Liberian economy.

^•4.4 Monetary Policy and Foreign Currency in Circulation

The US dollar component of broad money in circulation in 2007 amounted to US$127.6 million or L$7,592.3 million.

Similar to previous years, the US dollar component of broad money accounted for the larger share of 67.2 percent (LS10,852.9 million or US$171.6 million) compared with 32.8 percent

(L$5,289.5 million) for the Liberian dollar component. The US dollar share rose by 46.4 percent over the L$7,411.5 million level recorded for end-December, 2007 while the Liberian dollar component declined by 3.8 percent when compared with the end-December, 2007 level of L$4,565.6 million.

Developments in the supply of broad money clearly indicate a surge in the rate of dollarization of the economy. One estimate puts the ratio of foreign currency in circulation and foreign currency deposits to broad money averaged 90.0 percent, which shows a continuous move towards full dollarization in the absence of concrete steps to arrest and reverse this trend.

The US dollar component of broad money in 2009 constituted 73.6 percent while the Liberian-dollar component accounted for 26.4 percent in the 11-month period up to November, 2010. The US dollar component of broad money increased by 27.7 percent, from L$16,516.2 million at end- December, 2009 to L$21,096.6 million at end-November, 2010, while the Liberian-dollar share expanded by 19.2 percent during the same period. The higher percentage share of US dollars reflects the highly dollarized nature of the Liberian economy.

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4.2.7 Monetary Policy and Price Stability

U is through the conduct of monetary policy that the CBL should strive to maintain price stability. At present, the CBL has limited monetary policy instruments, and is looking at ways to improve the situation. For now, reliance is placed on the auction of the United States dollars to help stabilize the exchange rate.

4.2.8 Monetary Policy and Banking Sector Reform

rhe banking sector remained stable in 2007 as the number of commercial banks remained 5, consisting of Ecobank Liberia Limited (EBLL), First International Bank Liberia Limited (FIBLL), Global Bank Liberia Limited (GBLL), International Bank Liberia Limited (IBLL) and Liberia Bank for Development and Investment (LBDI). However, the number of offices and/or branches increased from 11 in 2006 to 17 in 2007. A few of the money-transfer wmdows were transformed into full branch facilities. Counties currently benefiting from expansion in banking services are Montserrado, Nimba and Grand Bassa. The opening of Ranches, which is supported by the CBL, took place against the background of improved

capital position of the commercial banks and better corporate governance, although there is still room for further progress.

The banking system showed improvements during 2007. The Capital Adequacy Ratio (CAR) of the system at end-November 2007 was 23.0 percent (Table 1), with only I bank falling short of the 8.0 percent required minimum. This improved CAR position, which is 11.0 percent higher than that **of** December **2006,** was due largely to injection **of** fresh capital by 4 of the 5 banks operating in the country. The total additional capital injection reported for the period under review was LS220.7 million or US$5 5 million. Another major factor contributing to the improved CAR of the system was the restructuring of the GoL indebtedness to the Liberia Bank for Development and Investment.

In 2008, the number of commercial banks increased to six (6): Ecobank Liberia Limited (EBLL), First International Bank Liberia Limited (FIBLL), Global Bank Liberia Limited (GBLL), International Bank Liberia Limited (IBLL), Liberian Bank for Development and Investment (LBDI), and United Bank for Africa Liberia (UBAL).

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The number of bank branches increased from 17 in 2007 to 28 at end-2008. Also., a total of 14 windows were opened during the year. Several approvals weie granted for the establishment of branches in counties without bank branches and offices. Counties currently benefiting from the expansion in banking services are Montserrado, Nimba, Margibi, Bong, Grand Cape Mount and Grand Bassa, The expansion is in line with CBL's policy of promoting access to banking services to all segments of the population.

The number of commercial banks increased from 6 in 2008 to 8 in 2009. This increase resulted from the granting of licenses to AccessBank Liberia Limited-The Microfmance Bank (ABLL) and Guaranty Trust Bank Liberia Limited (GTBLL) Global Bank Liberia Limited (GBLL) was acquired 100.0 percent by Bank PHB, Pic, Nigeria. The licensing of Access Bank to focus on microfinance is in keeping with the CBL's objective of increasing access to financial services by low-income earners and the economically active poor people.

Meanwhile, branch **network** increased from 28 branches in 2008, to 56 branches at end-**December,** 2009. Currently, banking **services** are being offered in 9 of the 15 counties **compared with** 5 **counties** in 2008. During 2010, the number of operating banks remained at

eight while in 2011 one Afriland First Bank Liberia Limited (AFBLL) was granted a license to operate in 2011, bringing the total number of banks operating in the country to 9.

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CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This study has investigated the relationship between dollarization and monetary policy in Liberia investigating eight dependent variables relating the two. The study was prompted by an aged old economic situation as a consequence of Liberia trading in two currencies which impact all major economic activities in the country.

Both the United States and Liberian dollars are legal tender in Liberia, thereby resulting in fluctuating exchange rates between the two currencies and having effect on prices and overall economic condition.

Prices of basic commodities depend on the exchange rate and the prevailing trading condition between the two main currencies treaded. The Central bank of Liberia has over the years taken measures to stable the exchange rale but to no avail and only rely on auctions of United States dollars whenever there is an increase in demand for United States dollars which result in depreciation in Liberian dollars.

Monetary policy by the CBL has been a key element in helping to maintain a level of stability in the Liberian economy as it relates to trading in the two currencies.

A number of literatures relative to this study have been reviewed to help the researcher gain an insight of past studies on dollarization and monetary policy. However, none of such literatures conclusively discussed all the eight independent variables used in this study. A number of studies have been reviewed all of which to a larger extent speak to issues of dollarization and monetary policy. Such literatures include an analysis of the Central bank of Liberia annual reports for several years. Numerous studies have been conducted on this topic including Calvo and Vegh (1992, 1996), Levy Yeyati (2004, 2006), Leiderman et al. (2006) analyze the challenges faced by Peru compared to no dollarized inflation targets, and all conclusions reached in these studies and reports point to the fact that the monetary policy adopted by country leads to the determination of the dollarization level.

The study adopted a descriptive research design in studying the relationship between d°Harization and monetary policy. Descriptive research design allows the research to study elements in their current state without necessarily making any changes to them. The data

used for the study captured all the figures of the eight variables and their relationship with dollarization and monetary policy. The data were analyzed using the Microsoft Excel data analysis tool and presented in tables, and graphs. The study was done using three simple regression models each being used to establish its relationship with the independent variables, dollarization and monetary policy.

The study found out a strong positive relationship between dollarization and monetary policy as the Centra! bank indicated in several of its annual reports that due to the lack of a strong monetary policy it is difficult to ensure the circulation of only the Liberian dollars as i he legal tender.   The correlation coefficient and the coefficient of determination are 0.97007749 or 97.0%. This suggests that the linear relationship between exchange rate and monetary policy is determined by 0.941050337 or 94.1%.

The study done on dollarization and monetary policy reveal a strong positive relationship. The summary output in table lputs the multiple R otherwise known as correlation coefficient at 0.32890945 or 32% implying that linearity between the variables can be measured by Y_2 (inflation) = 3E-06 + 1.048 Multiple R. The coefficient of determination is 0.103181426 or 10% suggesting that of all the variations in inflation only 106% can be explained by monetary- policy while the rest is attubuted to other factors.

5.2 CONCLUSION

Dollarization has been a topic of special interest in Liberia as the country has used its domestic currency the Liberian dollars alongside the United States doliars for years During periods of macroecoriomie and political uncertainty, Liberia experienced a partial replacement of its domestic currency almost entirely with the United States dollars since successive interim administrations during the crisis era had Utile opportunity to print new currency. At one point during Liberia's crisis era between 1989-2003 the country had three currencies in circulation two separately printed local currencies used in separate parts of the country along with the United States dollars.

For some countries, the issue was discussed within the context of conjuncture; dollarization, therefore, was viewed as an integral to globalization both with respect to international trade and global capital markets. Hence, learning-to-live-it approach was adopted. For some other countries with high dollarization rates, carrot-and-stick approach is recommended as a dedollarization stiategy. Despite these alternatives however, few actions have been taken in practice. Hence, the issue still needs to be resolved yet without a one-type-fits-all approach.

For Liberia, the focus of this study, dollarization is aged old and the Central Bank of Liberia has shifted its attention to carrying out currency auction as a means of mitigating the negative effects of the fluctuating exchange rate between xhe two currencies traded which also affect prices and living standard as a whole instead of adopting some of the global strategies stated above.

Dollarization can occur in two ways. In de facto dollarization, or "currency substitution," the dollar or hard currency is used in private transactions as a unit of account, as a medium of exchange, and as a store of value), but is not legal tender. Another path to dollarization occurs when a foreign government makes a conscious decision to re-place its own currency with the U.S. dollar. In official dollarization, the hard currency becomes legal tender for at least one of these purposes, but not necessarily exclusively. In full dollarization, the dollar is the only legal tender and the country's own national currency ceases to exist. This is the case in Panama, Micronesia, Hast Timor, and others, in Liberia with limited dollarization, this policy shift can take the form of allowing residents to hold dollar-denominated accounts. For

example, in Argentina, whose currency board pegs the currency to the dollar by law, banks offer dollar accounts and dollars circulate freely alongside the peso.

Liberia's situation is an unofficial or de facto dollarization which causes citizens to lose faith in the Liberian dollars and turn away from it toward the dollar; and has long been observed in where high inflation causes the Liberian dollar to lose its value quickly arid depreciate regularly. Prices are also unstable or unpredictable that using dollars is more predictable than inflation indexed contracts. Conversely, banks arc unwilling IO make long-term loans in Liberia since the money used to repay will be worth much less than the amount lent and the highest duration of loans is Liberia is three (3) years. Because people prefer to store their wealth in a stable currency whose value can be predicted, they move their savings into dollars. At the same time, business people begin io write contracts in dollars to insure that the currency is protected from depreciation.

The study on the relationship between dollarization and monetary policy found out a positive strong relationship of 0.97007749 with an explanatory strength of 97% suggesting that exchange rate impacts the monetary policy or the monetary policy developed help to manage the problem of dollarization. This finding supports the conclusion reached by Adrian Armas (2004) study done in Peru, who found out that monetary policy in a dollarized economy is not effective and leads to economic problem such as inflation and can have a future damaging effect. The findings in this study on the relationship between dollarization and monetary policy link could shed further lighi on the effect of dollarization on the overall state of the Liberian economy to the extent that dollarization and monetary policy affect the variables directly.

Generally, the study concludes that without a well formulated and implemented monetary policy, no country is able to tackle the issue of dollarization and its accompanying financial and economic consequences.

5.3 Policy Recommendations

The first question, that is, dilemma, is whether Liberia should main the dual currency currently in circulation or stick to its own currency, the Liberian dollars. There is no empirical evidence on the abandonment of dollarization in modern history, so there are no examples of other countries whose experiences could be used to draw some conclusions and make strict forward recommendations.

The fact thai no country has opted for the abandonment of dollarization, although some of them have a dollarization history of more than one century including Peru, Montenegro and most of Latin American countries, suggests that the prevailing opinion is that the abandonment of dollarization would be detrimental.

While the benefits of dollarization seem attractive to a country with a history of intractable inflation and high interest rates, dollarization is not a cure-all for the country otherwise unable to reform its finances and institutions. Official dollarization by itself will not infuse policy credibility into a government, and the same virtuous economic policies that are necessary to repair a country's reputation are necessary to make dollarization work.

After studying all the variables indicated in this study underlying the relationship between dollarization and monetary policy, the following recommendations are herewith put forth.

• In order to ensure its effectiveness, dollarization itself should be followed with institutional reform top ensure, for example, that chronic budget deficits do not eliminate polarization's contribution to low inflation. Even so, policy credibility takes decades to develop to the point where all political parties likely to acceded to power support it and the public believes that it will not be retracted, therefore the Central bank of Liberia must put in place policies that will ptotect the Liberian dollars against the United States dollars since majority of Liberians transact in Liberian dollars.

[1] 'Macroeconomic stability has just been established in Liberia after nearly 15 years of unbroken civil war, and it is most likely that switching to another monetary regime would •nduce a deterioration of macroeconomic credibility;

•That the CBL **endeavors** to restore its foreign exchange reserves, to reduce the expenses of conversion of the United States dollars to Liberian dollars whenever there is depreciation in the Liberian Dollars and there arises the need to infuse more United States dollars to handle the situation, the CBL can do so without incurring much cost.

•A change of the current monetary regime could lead to increase in inflation and it is likely that in a situation of uncertainty, economic entities would try to protect their property by increasing prices which will be detrimental to the overall financial sector.

•The experiences of unofficially dollarized countries have shown that the strong hysteresis effect would still be present after macroecononnc stability was established which would probably happen to Montenegro This means that a part of transactions would be in Euros, which would contribute to an increase in the grey economy and a reduction in fiscal income; The introduction of a domestic currency would be a bad signal for investors who prefer doing business in a hard currency;

5.4 **Limitations of Study**

This study experienced numerous bottlenecks as its source of information was limited to the central bank of Liberia which the bank of Government and the main originator of financial and fiscal policies in Liberia. The authenticity of the Central information could not be tested due to resource limitations in gathering data independent of the CBL's data for testing, validation and comparison.

Some of the variables listed to be studied were not discussed by the Central bank of Liberia in its annual reports between the periods covering the study 2007-2011. Price stability, foreign currency deposit and reform in the banking sector were some of the variables listed in this study that were not discussed in detail by the Central Bank of Liberia in its annual reports.

The CBL in all its annual report failed to state the reforms carried out in the financial sector of Liberia over the period study only pointing to increment in the number of banks and increase in commercial activities as a basis for reform. There is no straight reform such as new monetary policies introduced, laws and regulations promulgated to help tackle the issue of dollarization and as such the reform variable was not adequately analyzed.

In the absence of fully analyzing all the eight independent variables stated in the study and their relationships with the two independent variables dollarization and monetary policy, the study cannot draw out definite conclusions, thus limiting the scope of the study.

5.5 Suggestions for further studies

Dollarization and monetary policy is a big issue in Liberia and problem facing several countries that are experiencing this economic situation. The fact that there is no empirical evidence on the abandonment of dollarization in modern history and there are no examples of other countries whose experiences could be used to draw some conclusions and make strict forward recommendations is an indication of the need for more studies on dollarization and monetary policy to come out with strict recommendations.

The fact that no country has opted for the abandonment of dollarization, although some of them have a dollarization history of more than one century including Peru, Montenegro and most of Latin American countries, suggests that researcher have to research further on this concept of dollarization and monetary policy.

l or a more encompassing and exhaustive empirical analysis, disaggregated financial data, especially for all the variables listed in this study and additional variables including Gross Domestic Product, Balance of Payments, amongst others are required. These data arc required in order to capture variables such as the impact of dollarization on Per Capital Income, Liquidity of financial institutions in Liberia, etc.

In addition, it would be interesting to examine the information content of the spread in terms of forecasting macroeconomic variables such as investment, inflation and growth. What is the relationship between the dollarization and monetary policy on and the growth of the Liberian economy? What is the implication of dollarization and monetary policy on investment and mobilization of savings? These are questions that should be addressed in future given the importance of the subject for the financial market.

This paper, its results, conclusions and policy recommendations is a first step towards a comprehensive analysis of the financial sector in Liberia. A healthy and competitive financial sector is crucial for stimulating, supporting and sustaining growth in the economy, with the private sector and fiscal and monetary authorities being an integral part.

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fable 4: Liberian Currency in Circulation December 2005-November 2007)			
(In Millions L$) End of Period	Currency in banks	Currency outside banks	Currency in circulation
(1)		(2)	(1+2=3)
2005	210.3	2,168 9	2,379.3
2006	166.3	2,647.6	2,813.9
Nov- 07	244.8	2,857.5	3,102.4

Table 5: Year-on-Year Rate of Inflation
(2007 - 2008)

(December, 2005 = 100) Month	2007	2008
January	120	16.5
February	13.0	14.8
March	11.2	14.3
April	13 5	11.7
May	10.1	19.2
June	12.5	22.0
July	12.6	21.3
August	9.9	26.5
September	12.7	20.0
October	8.6	18.6
November	9.5	15.5
December	**11.7**	9.4
Average Rate	**11.4**	**17.5**

Table 6 Money Supply and Broad Money

(In Millions of L$) End of Period	Currency outside banks	Demand Deposits	Money supply M1 (1+2)	Savings Deposits	Time Deposits	Quasi-money (4+5)	Broad Money-M2
i11	(2)	(3)	(4)	(5)	(6)		3+6)
Dec.05	2,168.9	2,701.9	4,870.9	1,429.7	61.4	1,491.0	6.361.9
Dec. 06	2,647.6	3,973.2	6,620.8	1,830.4	97.6	1.928.0	8,548 8
_Nov-07	2.857.5	5,927 8	8,785.4	2,654.7	4.23.7	3,078.4	11,863.8

Table 7: Liberian Dollars in Circulation
(2006-November. 2008)

(In Millions) End of Period		Currency in banks	Currency outside banks	Currency in circulation
(1)		(2)	(1+2==3)	
Dec. 06		166.3	2,647.6	2,813.9
Dec. 07		276.9	3,317.4	3,594.4
Nov-08		410.7	3,356.9	3,767.6

APPENDIX I: COMMERCIAL BANKS IN LIBERIA

1. First International Bank Liberia Limited
2. Guaranty Trust Bank
3. International Bank Liberia Limited
4. Liberia Bank for Development and Investment
5. Access Bank Liberia Limited
6. Leo Bank Liberia Limited
7. Global Bank Liberia Limited
8. Afriland Bank Liberia
9. United Bank of Africa