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Impact of Interest Rate Policy and Financial Reforms on Economic Growth in the BEAC Zone: The Case of Cameroon

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IMPACT OF INTEREST RATE POLICY AND FINANCIAL REFORMS ON ECONOMIC GROWTH IN THE BEAC ZONE: THE CASE OF CAMEROON

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DEDICATION

This work is dedicated to my late parents: Father, Ajong Stephen Tabi, uncle, Amin James Tabi and my beloved mother, Nzengung Judith who struggled unrelentlessly towards my survival and success from childhood after the death of my father but recently fell into the cold hands of death without seeing me rise to the level she had planned for.

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ABSTRACT

This study attempts to analyse the impact of interest rate policy on economic growth in Cameroon of the BEAC sub-region. It covers the period before 1990 marked by negative real interest rates which symbolizes a repressed financial system and the 1990s characterised by positive real interest rates following the reforms in the financial sector.

The study is based on the principle that the impact of interest rate and financial reforms on growth works through the relationship that exists between savings and investment. As such savings and investment equations were also specified and estimated. An econometric switching model was used to estimate the growth and efficiency of investment equations. The model to be verified holds that the efficiency of investment will be negatively correlated with below-equilibrium interest rates and positively correlated with above-equilibrium rates. This implies economic growth should be positively correlated with below and above equilibrium interest rates respectively. This is because when the interest rate is held below equilibrium, rising investment compensates for falling efficiency of investment whereas at above equilibrium interest rates, falling investment due to high cost is offset by rising efficiency. The following results have been obtained.

Financial liberalisation theory holds that reforming the financial sector will lead to positive real deposit rates. This in turn, will raise the savings rate; increase financial deepening or bank liquidity; raise the quantity and quality of investment thereby promoting economic growth. The empirical evidence for Cameroon still provides mild support for the theory. Real interest rates are averagely positive but the response of savings and the efficiency of investment are positive and insignificant whereas the quantity of investment, financial savings or bank liquidity and economic growth are negatively though insignificantly affected. However, there are indications that the reforms have been implemented in a period of relative macroeconomic instability and uncertainty which might have hindered the success of the reform. Furthermore, some of the reforms are yet to be implemented (e.g. the creation of a stock market and Deposit guarantee scheme etc.).

At the level of the interest rate policy probably before the reform, real interest rate effectively influenced the flow of funds into the banking sector as real money balances are interest-elastic. The reason for this could be that in a greater part of the pre-reform period, the macroeconomic and banking environment were stable and the favourable terms of trade might have generated much liquidity from exports. However, despite the availability of funds in the banking system, economic activities declined, as these funds were not made available to potential investors. This is reflected in the non-responsiveness of

capital investment to real interest rates, as such the banking system is considered inefficient in Cameroon. Aggregate savings are also interest-inelastic but this may stem from the fact that the income effect dominates the substitution effect. That is, savings depend very much on income growth. The effect of the discount rate (real lending rate) on investment is positive and significant (insignificant). This may reflect the view that the availability of funds rather than the cost is important for investment decisions. And the net impact of real deposit rate on economic growth is negative. In sum, the interest rate policy is ineffective. The existing structure of interest rates is economically insignificant and does not form the basis for monetary policy in Cameroon. Other factors interplay in the growth process.

The insignificant nature of interest rate movements resulted to an insignificant equilibrium rate which made it impossible to draw a conclusion of whether too low an interest rate is detrimental to economic health as setting them to high. The hypothesis ought to be verified using a switching model as mentioned above with an unknown equilibrium interest rate. The model obtained suggests that the rate of economic growth is negatively but insignificantly correlated with below and above equilibrium interest rates respectively. This indicates the non-existence of a definable equilibrium interest rate in the empirical context of Cameroon.

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INTRODUCTION TO THE STUDY

1. INTRODUCTION

The interest rate policy has a role to play in economic development since it links savings and investment. The literature on finance and development has traditionally focused on the role of the rate of interest in generating savings via inducing a reduction in consumption at a given level of income. In the financial liberalisation theory, it is argued that high real interest rate has a positive growth effect. This is because the quantity of real savings increases thereby making funds available for investment. In contrast, the Keynesian theory strongly suggests that high real interest rate raise the cost of borrowing and therefore discourage investment, growth and savings. Thus, the theory of low real interest rate should favour investment that determines savings through income growth. However, the financial liberalisation theory advocated by Mckinnon (1973) and Shaw (1973), considers the savings-liquidity/investment circuit as its theoretical base (i.e. it is savings that determines investment via high real interest rate).

In Cameroon, and in the BEAC sub-region, economic reforms in the context of the structural adjustment programmes, have equally given an important attention on restructuring the financial and banking sector. Throughout the 1970s and early 80s, interest rates were set administratively at low levels in order to promote investment. This was in line with the policy of

low rates advocated in the Keynesian theory. As from the end of the 1980s, the management of interest rates were made more flexible as part of the structural reforms. This reform which aimed at improving the efficiency of the financial system with a move away from direct towards indirect monetary policy is expected to promote economic growth. Thus, restructuring does not only aim at raising interest rates. Several other issues are within this context e.g. better banking performance and reduction of waste through the elimination of preferential interest rates, liberalisation of banking conditions, creation of a viable money market, improvement of prudential regulations, instituting a new form of monetary programming and the reduction of government ascendancy in the banking system. It is with this regard that the study aims at assessing the old policy, the extent of the financial reforms and their corresponding impact on economic growth.

2. A STATEMENT OF THE RESEARCH PROBLEM

During the period 1960 to 1986, the Cameroonian economy registered an impressive growth performance and this was triggered by its diverse agricultural base coupled with the development of offshore crude oil resources in the late 1970s[1] . This permitted the country to maintain a high level of per capita income

[1] *See Eurostat, country profile Cameroon 1993.*

despite the high population growth rate. Cameroon was then classified as a middle income country.

However, since 1986 almost all the key economic indicators have been declining mainly due to the collapse of the world commodity prices and internal structural problems[2] . Nevertheless, there were also problems of external shocks such as the drying-up of foreign capital inflows and unstable exchange rates. The major weaknesses of the economy of Cameroon were then exposed as the economy was plunged into severe liquidity crisis and increased budget deficits. This forced the authorities to put in place a programme of far-reaching economic consequences in the 1987/1988 budget. This was the stabilisation programme, concluded with the IMF in September 1988[3] .

In accordance with the spirit of the programme which calls for a total deregulation of the economy, many innovations were also later introduced into the financial sector. This action undertaken to reform the financial system paved the way for a new financial policy option within the BEAC zone. The financial policy of countries in the region had been in favour of low interest rates based on the grounds that they will enhance the level of fixed capital formation[4] . It was hoped that, in order to increase investment and restore the liquidity position

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2 *Twentieth report of the National Credit Council, Cameroon for the 1987/1988, 1988/1989 and 1989/1990 financial years, p.103.*

3 *Ibid.*

4 *It is commonly believed that the theoretical underpinning for a policy of low interest rates was provided by the popularised version of the Keynesian proposition that interest rates should be kept low to speed up the accumulation of capital or investment (Nissanke, 1994).*

of the economy and thus stimulate growth, policies to boost internal savings were necessary to be adopted. For this reason, a restructuring of the financial and banking sector needed attention. This is in line with the financial liberalisation theory of Mckinnon and Shaw (1973) which advocates free financial markets on the grounds that savings which represent a source of productive investment will be boosted. However, reforming the formal financial sector should not be regarded as a panacea to generate increased growth.

The financial sector in developing countries including the BEAC zone is composed of formal and informal units. This implies that policy measures should not rely heavily only on the former as a growth enhancing machinery. The informal financial section could be in a better position to enrich the development fundamentals of a third world nation like Cameroon in the BEAC zone. For instance, during the phases of expansion (from the 1960s to 1986), characterised by good performance of the national economy, the informal financial sector occupied a very important place in the financing of economic activities. As noted by Grozinger (1988), informal finances contributed largely to food production in the rural areas during the expansion phase whereas the modern financial sector was preoccupied with financing the collection and transportation of export products to the ports for exportation. Furthermore, it would appear that the formal financial sector does not finance enormously the agricultural sector due to the risk of non repayment of loans. Since the sector

represents the mainstay of the economy, the insufficiency of formal financing implies a reform of the latter may not necessarily raise agricultural productivity and hence economic growth in Cameroon and the BEAC zone in general.

Another reason why the formal financial sector may not promote economic growth is due to the situation peculiar to sub-Saharan African countries. The income levels are low coupled with high and skewed patterns of consumption, and structural factors that constraint the ability to save as well as of governments to raise resources needed to finance their expenditures. For this reason, positive real deposit rates occurring as a result of financial reforms may not necessarily raise the level of savings to finance investment. In addition, in most of these countries, credits seem to be granted mostly for consumption purposes at the expense of investment spending for reasons that most loans are granted to urban dwellers or civil servants. In Cameroon, according to a statement of the national credit council for the 1994/95 and 1995/96 financial years, a geographical breakdown of the entire credit granted shows that Douala and Yaounde took first and second places respectively. One may therefore be forced to conclude that the commercial banks loan are not accessible to a majority of the population and to potential investors in Cameroon. The consequence is perhaps high level of consumption leading to reduction in savings, low investment and growth which should not even respect interest rate movements.

The financial sectors particularly those of sub-Saharan Africa have been in bad shape due to mismanagement and poor institutional settings and this should have an effect on its efficiency. The World Bank (1994, p.110) described the financial system in Africa as those characterised by weak resource allocation and mobilisation, high credit losses, high intermediation costs, and excessive political interference. Cameroon is not an exception as most of its commercial banks became insolvent in the late 1980s and were liquidated[5] . However, this prompted the adoption of the restructuring process in 1988 which was stepped up in 1990/91 financial year by the decision of the BEAC to revise interest rates beginning October 1990[6] . Such restructuring affected the formal financial system to the neglect of the informal sector. From the foregoing it becomes important to examine what impact such a revision of interest rate had on the economic growth of Cameroon. In other words, it is of ultimate importance to empirically determine whether the formal financial sector and the reforms undertaken there in, have a role to play in growth process of Cameroon in particular, and the BEAC region in general. From the study, one may be able to suggest what plans to undertake as concerns future policy orientations in the sector and as well in the informal financial sector. It is also

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[5] *See the twentieth report of the National Credit Council, p.130, 1987/88, 1988/89, 1989/90 financial years for details.*

[6] *As mentioned in the twenty first report of the National Credit Council, p.25, 1990/91 financial year, the various steps include: the elimination of the preferential interest rates in October 1990, repeal of minimum lending rates and instituting a maximum rate and a minimum deposit rate, and frequent adjustments of interest rates taking into consideration trends in the economic and financial situation.*

very important to understand whether setting interest rates too high may be detrimental to economic health as opposed to low rates. The reason is that, while one theory advocates a negative relationship between investment and the level of interest rates, another postulates a positive relationship via more credit availability[7] . However, this might occur at favourable rates of economic growth since funds are allocated to productive investments and as such efficiency in investment is expected to be high. No study has examined empirically such a situation and considering that interest rate setting is an important policy matter, there is need for a thorough investigation in the Sub-region.

Furthermore, it is also necessary to understand at what level real interest rates may unfavourably affect economic growth. Perhaps a knowledge of the situation would have helped Cameroon and other countries to combat the crisis of the 1980s which was fuelled by oil price shocks and deteriorating terms of trade among other factors. Since a policy of low interest rate that exhibits regulation had been the order of monetary policy in the BEAC zone until 1990 when interest rates were rationalised or liberalised,[8] it is worthwhile to have an insight into which regime to be sustained in the zone. Further, this study could

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[7] *The Keynesian theory holds that low interest rate will promote investment as opposed to higher rates, whereas the financial liberalisation theory of Mckinnon and Shaw (1973) argue for high interest rates to attract savings for investment.*

[8] *Even though reforms in the financial sector were initiated between September 1988 and April 1989, this study has considered 1990 as the year when the effects of financial liberalisation could be felt. This is because, that year marked by the beginning of liberalisation of banking conditions where lending and deposit rates of interest were to be fixed freely through negotiations between banks and the customers in compliance with the limits constituted by the minimum deposit rate and the maximum lending rate (see twenty-fourth report of the National Credit Council, 1994/95 and 1995/96 financial years, p.61).*

possibly help policy makers understand if the existing structure of interest rates respect economic norms or more precisely whether financial decisions are dependent on the level of interest rates in the region.

This study will therefore attempt to investigate the effect of real interest rates on the structure and volume of savings and investment, efficiency of investment and hence on economic growth. With this done, policy makers may be able to gain better insight into the role of interest rates in the growth process. More importantly is the productivity and quality of investment as affected by the interest rate which is among the objectives the study seeks to analyse. Finally, the crucial link existing between investment and economic growth in situations of low or high real interest rates may seize from being a matter of conjecture.

3. OBJECTIVES OF THE STUDY

The main objective in this study is to assess the effect of the interest rate policy and financial reforms on economic growth in Cameroon, and the mechanism works through savings and investment. We will be guided through this process by the following specific objectives:

(a) To examine the reforms undertaken in the financial sector and assess the impact on macroeconomic performance. This will be done by specifying and estimating the savings, investment and growth functions with the

interest rates as the primary causal variable. However, descriptive statistics which compares the variables before and after reforms shall also be used;

(b) Assess the effect of real deposit rate (a proxy for returns on capital) on the average efficiency of investment. This will be examined by using the incremental capital output ratio as the measure of efficiency of investment and to regress it on real deposit rate and other variables believe to influence the efficiency of investment;

(c) Determine the extent to which interest rates can form the basis of financial and monetary policy in the Sub-region. This involves a critical examination of the reliability of the coefficients of real interest rates in the savings, investment, growth and efficiency of investment equations.

(d) From the above we hope to put at the disposal of policy makers an analytical and empirical base for future policy formulation in the domain of interest rate policy and financial reforms.

4. RESEARCH HYPOTHESES

The following hypotheses have been developed based on the above research objectives. These hypotheses are:

(a) The reform of the financial sector has resulted to economic recovery in Cameroon by causing a rise in savings rate, financial deepening, the quantity of investment and economic growth. This is because real interest rates becomes positive and therefore attracts savings for investment which generates growth (Mckinnon and Shaw, 1973);

(b) The variation of interest rates do not affect the movements and direction of loanable funds in the formal financial system in Cameroon. This is because real interest rates have been negative or low in a greater part of the period. That is, financial savings or real money balances and aggregate savings are unresponsive to interest rates;

(c) Capital investment both in quantity and quality are responsive to changes in interest rates despite the low real lending rates or to the deposit rate respectively;

(d) The non-responsiveness of savings, investment and efficiency of investment to real interest rates is an indication that the rate of economic growth is not affected by the interest rate policy. The points above express the fact that the movement of interest rates is economically insignificant and therefore does not form the basis of financial and monetary policy in the BEAC zone.

5. METHODOLOGY

5.1 Data Sources and Collection

The major source of secondary data came from publications of the central statistics office in Yaounde. There was a lot of inconsistency in the compiling and publishing of data in the central statistics office. As such, we normally relied on statistics from the publications of international bodies like the World Bank, the IMF and the Bank of Central African States.

From the Directorate of Central Statistics and National Accounts of the Ministry of Economy and Finance in Cameroon, data that have been collected are published in documents including "Notes Annuelles des Statistiques" and "Comptes Nationaux du Cameroun". The data include; Gross Domestic Product (GDP), gross investment, public investment, private investment and depreciation. Another national source of data is the Head Office of the Post Office Savings Bank in Yaounde. The interest rate on postal savings which represent the deposit rate in our study, for reasons explained further below, were collected from the above source.

The Bank of Central African States (BEAC) served as another important source of data. From some of its publications comprising "Etudes et Statistiques", "Statistiques Financiers et Rapport d'Activité" and the progress reports of the National Credit Council (NCC) of Cameroon, the following data

were obtained: Money stock (M2), Domestic credit, Credit to the private sector, and the values and volumes of exports and imports which were used to derive the openness of the economy (defined as the ratio of exports plus imports to GDP) and the terms of trade index.

From the IMF "International Financial Statistics", the data collected were, the Central Bank discount rate, population for calculating per capita GDP, and the consumer price index, inflation rate for Cameroon and the World which were further used to derive the real exchange rate as well as the real deposit rate. Data on gross domestic savings and foreign savings expressed as proportion of GDP including the external debt service - export ratio were got from the World Bank sources as earlier indicated.

5.2 Method of Analysis

The method employed to empirically analyse the data set is discussed in details in chapter three. However, this section briefly looks on the model type introduced in the study.

A spline function[9] and an incremental capital-output ratio are suggested as the main tools of analysis. The spline model attempts to show whether economic growth could vary differently in situations of below and above

[9] *A spline function is either a straight line or a curve made up of distinct pieces or breaks where each represents a particular economic situation (see section 3.2.2 for details).*

equilibrium interest rates. Accordingly, linear spline functions for the growth and incremental capital-output ratio have been introduced. In the study, the interest rate variable is the primary variable assumed to influence economic growth and efficiency of investment as measured by the incremental capital-output ratio. Thus, the model hypothesises that when real interest rates are held below the equilibrium (a proxy for low rates), economic growth declines as efficiency of investment is negatively affected. On the other hand above the equilibrium, a proxy for high real interest rates, growth accelerates as a result of a possible rise in the productivity of investment.

The other variables e.g. aggregate savings, financial savings and investment are formulated and specified in their conventional linear forms. Nevertheless, it should be understood that a dummy variable has been introduced in each equation in order to assess the relative effects of financial liberalisation or reforms[10].

6. LIMITATIONS OF THE STUDY

The period of this study stretches from 1972 to 1996 which covers both periods of financial repression (i.e. 1972 - 1989) and interest rate reforms which

[10] *In this study, the reform period comprises of limited yearly sample of observations. The non-availability of quarterly data prevented us from carrying out a sub-period estimation, as such the quality of the results will be improved by the use of a descriptive statistics.*

was effective as from 1990.[11] Several problems were encountered in the study especially at the level of data collection and data series. The first is concerned with the choice of the deposit rate. For those published by BEAC, which comprise (e.g. interest rates on time deposit 3 - 6 months, 6 - 12 months, 12 - 24 months and the rates on treasury bonds and saving deposit), long-time series data are not available, precisely within the 1979 periods. And as such this would have limited the period of coverage of the study to 1979 - 1996, which represents a small sample. Furthermore, the deposit rate on time deposit and treasury bonds were not unique until 1990 when minimum rates were instituted for such deposits. However, a unique rate exists for the savings deposit, but since data on these rates are not available within the 1979 periods, we preferred to use the rate of remuneration on postal savings which are available on a long-time basis. More to that, BEAC (1988) used this rate as a proxy for interest rate on deposit, and as Sergio, Pereira Leite and Dawith (1986) argue, such a choice does not affect much of the results because a strong relationship exists between the different interest rates on savings. But Haque Montiel and Layiri (1990) powerfully argue against that the lack of consensus on the responsiveness of savings to changes in interest rates is due to the various proxies which are used. They then proposed the calculation of a rate that could be considered as a key

[11] *The choice of the year 1972 is conditioned by the availability of data while 1990 is the year when interest rate controls were relaxed and preferential interest rates abolished in Cameroon.*

deposit rate or a 'benchmark' rate for all rates and which depends on internal and external factors, taking into account the degree of capital mobility. Accordingly, such a calculation is to be done by the use of a three stage ordinary least square and being a complex method which requires enough time, it was not considered in this study. However, comparing the various rates published by BEAC from 1979 to 1996, together with the rate of remuneration on postal savings,[12] one realises that they align themselves. This fact therefore supports what Sergio and Dawith (1986) says, about the general tendency for all rates to move together. Nevertheless, there was still a problem. The rate on savings deposit in commercial banks did not maintain the same trend with that on postal savings during the 1995 and 1996 periods. Whereas, the latter remain at 8 percent, deposit rate on commercial banks savings deposit dropped from 8 to 6 percent[13]. We decided for this reason to consider the average value of the two rates in 1995 and 1996[14].

Another problem as concerns data collection was that, in different editions of the same publications some variables have different values thus, demanding some judgement on which to use and also questioning the reliability of such data. This was also the case with the same variables in different

[12] *See appendix I.*

[13] *Ibid.*

[14] *The assumption is that using the average value of the two rates in 1995 and 1996 will not affect our results much, and the declining tendency of the deposit rate of banks is also taken into consideration.*

publications. Furthermore, some of the data do not reflect the actual figures for some periods. For instance, it was from 1984 that oil production was included in total exports as noted in "Notes Annuelles de Statistique". This therefore, had an important impact on the terms of trade and as well, on the variable representing openness of the economy.

The third problem concerned the values of public and private investments. We had to consider as public or private investments, the value of gross domestic fixed capital of the public administration or the sum of the gross domestic fixed capital of households including individual entrepreneurs, companies and other enterprises of the private sector respectively. The hope is that the results would not be affected much since investment is supposed to be the sum of gross domestic fixed capital and the addition to stock of physical goods. We have assumed that the former component accounts for more than two-third of the entire total investment. However, the major problem was that data series for the addition to stocks of each sector were hard to obtain and in some cases incomplete. But since at times, what is considered as private or public investment by the Financial and Administrative services of Cameroon is the gross domestic fixed capital[15], we find it reasonable to follow suit. It was not possible to have data on the different components of gross domestic fixed

[15] *When the data on these variables were compared with that published in the various progress reports of the National Credit Council (e.g. the twentieth report), it was realised they did not equate gross investment but the sum of the gross domestic fixed capital for both the private and public sectors.*

capital of the private sector. Global investment includes forms of non-productive investment such as housing. Thus in order to better assess the effect of interest rate on efficiency of investment in accordance with whether the former is below or above its equilibrium value, it would have been necessary to use the non-housing component of private or total investment.

In many cases, series data were not complete while some were not available at national sources. For completeness, we had to piece data from different sources into a single series and for the case of non availability, we relied on international sources. For instance, data on national price index are not available in Cameroon, instead consumer price indexes are available for Yaounde and Douala. This could have been used to calculate the real exchange rate, but there are problems of inclusion. We have therefore considered those kept by the IMF. Lastly and the most severe problem is the non-availability of quarterly data on real variables. This would have enabled us to carry out sub-periods estimations, investigate the time-series properties of the variables (i.e. testing for non-stationarity) and to avoid the use of dummy variables.

Above all the quality of much of the data is fairly good. Nevertheless, the above discussions on the various problems confronted during the collection and analysis of the data set give us an idea on the nature of the data we are dealing with. In this respect, the interpretation of the results could be done with a certain allowance.

7. PLAN OF THE STUDY

The rest of the work is organised in two parts. Part one serves as background to the study and involves chapters one and two. The first chapter concentrates on the literature review as concerns the working of the financial system and its role on developments and results obtained by previous researchers. Chapter two examines Cameroon's financial structure and its evolution.

Part two is divided into two chapters and comprises the theoretical and empirical features of the work. Model specification, estimation techniques, problems and solutions of estimations of the growth rate, efficiency of investment, liquid asset and investment models are subject matters of chapter three. Chapter four throws light on the economic analysis of the models specified in chapter three. Here, the marginal effects of the interest rate and other variables on economic aggregates - growth, financial savings and investment are identified. The general conclusion is made up of our findings and the policy suggestions emanating from the study.

PART ONE

BACKGROUND ISSUES TO THE STUDY

To constitute the base for this thesis, a review of the major works have been done in the domain of interest rate policy within the context of financial repression and financial liberalisation or reforms. This is precisely the subject matter of chapter one. Chapter two on its part describes the Cameroonian financial system and its performance. These two chapters make up part one of this work which actually represents the backbone for the theoretical and empirical analysis in part two.

CHAPTER ONE

REVIEW OF THE LITERATURE

1.1 INTRODUCTION

Since the early 1970s, experience has accumulated to support the arguments of Mckinnon (1973) and Shaw (1973) to the effect that keeping interest rates below equilibrium levels is more likely to obstruct productive investment than to encourage it (Clunies, 1991: 288). This is because the interest rates offered by banks and other financial intermediaries seem to have a direct effect on the volumes of funds deposited with them. The reason may be either that allowing real interest rates to rise towards a `market-clearing' level encourages savings, or that allowing them to rise in modern-sector financial institutions attracts funds that would otherwise be allocated by more informal channels or simply hoarded. The foregoing discussion is an indication of the fact that repressed finance is not growth-enhancing, since it reduces the flow of funds to the formal financial sector and distorts the most productive allocation of resources, leading to lower levels of savings, investment and growth. However, some authors argue that liberalised financial markets may still, and

for others will not, improve on the growth performance[1] . Thus, the dynamic interactions between finance and development are admittedly intricate and subtle as can be understood from the numerous works of many economists, which are examined below. This chapter therefore, is devoted to analysing the concepts of financial repression and financial liberalisation and the role these systems play in the development process as put forward by some researchers, (e.g. Gupta (1987), Montiel (1995), Lanyi and Saracoglu (1983) and Oshikoya (1992) etc.).

1.2 THE CONCEPTS OF FINANCIAL REPRESSION AND LIBERALISATION

Financial repression is defined as a situation in which government and Central Bank regulations distort the operation of financial markets (Thirlwall 1994, p. 238). These regulations include, ceiling on the nominal interest rates (making the real rate of interest very low or negative in times of inflation), the imposition of reserve requirements on the commercial banks; limiting their ability to lend; the requirement that banks lend to the government to finance budget deficits, and compulsory credit ceilings. Mckinnon (1973) and Shaw (1973) popularised the concept of financial repression and argued that a repressed financial system interferes with development in that intermediaries are

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[1] *Dornbusch and Reynoso (1989) and others say there must be macroeconomic stability and certainty for successful liberalisation; whereas neo-structuralists like Taylor (1983) and V. Wijnbergen (1983) and the Keynesians worry about the high cost of credits and its negative impact on investment and thus growth.*

not well developed for mobilisation of savings with low negative interest rates and inefficiency in the allocation of financial resources among competing uses. Under financial repression, banks will ration credit and grant loans according to non-economic criteria such as political influence. This allocation system leads to lower average productivity of all the investment projects which do receive funding.

The situation had been very common in Third World countries. As such their financial systems are categorised as repressed systems with low interest rate policy aimed at increasing the level of investment, improving the allocation of resources among sectors and keeping financial costs down to avoid possible inflationary pressures (Ngugi, 1997). However, this supports the liquidity preference theory of interest where Keynes (1936) argued for low levels of interest rates to speed up the accumulation of capital. Mckinnon (1973) and Shaw (1973) on the contrary, argued that low real interest rates kept below the market equilibrium increase the demand for investment but not the actual investment. Low interest rates are insufficient for the generation of savings. They reduce savings especially if the substitution effect dominates the income effect for households. On the other hand, low rates raise the expected profitability of investment projects by raising the net present value of future earnings from the project. The net effect is to raise the demand for funds

predicament as margins in banking business get narrower. Administratively set interest rate means exposing depositors to low non-negotiable rates, and they cannot benefit from higher rates offered by banks competing for deposits. As such, ceilings on interest rates leave banks with no incentive to mobilise savings or compete for loan customers. At the same time, they do not allow entry of new financial institutions stifling competitiveness in the banking sector. Low domestic interest rates cause capital flight, leading to foreign exchange shortages if international capital controls are relatively in-effective at preventing capital outflows. It is for the above reasons that Mckinnon (1973) advocated the following: abolish or relax interest rate controls; eliminate or greatly reduce controls on allocation of credit; switch to market-based indirect methods of money supply control and developed money and capital markets and so introduce the financial liberalisation.

Financial liberalisation theory argues in favour of improved economic growth through financial sector reforms. The supporters of financial liberalisation (e.g. Fry (1989), Oshikoya (1992) and Montiel (1995)) base their arguments on the works of Mckinnon (1973) and Shaw (1973). According to the theory, positive real deposit rates raise savings rate thereby, permitting the banking system to perform its true economic function, increase the flow of capital through the financial system, improve allocational efficiency and foster

economic growth. In recent years this advice has been followed with considerable success in some parts of the world, notably in East Asia[2]. Important international institutions like the World Bank have been making financial liberalisation a central element of structural adjustment programmes. But there are also several cases where financial liberalisation has failed because it was undertaken in an unstable macroeconomic environment (Pieter and Reinhard, 1991). In this respect, the financial liberalisation however is not without critics.

Firstly, it is argued that financial savings is only one type of saving. As interest rates are raised there may simply be a substitution between financial assets and other assets, leaving total savings unchanged. Also, it is well known that any price change has income effect as well as substitution effects, and if one offsets the other, the effect on total savings will be negligible (Thirlwall, 1994). It may be for this reason that Dornbusch and Reynoso (1989) expressed doubts as regards the belief that higher interest rates will mobilise savings. Infact, many of the recent empirical studies and surveys of the results of financial liberalisation in various countries are extremely cautious in their conclusions (Thirlwall; 1994, p. 279). However, Gupta (1987), suggested that there is little support for the `repressionist' hypothesis that the positive

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[2] *Financial liberalisation was implemented in Asia under macroeconomic stability coupled with credit controls to strengthen industrial policy and prevent adverse selection. See Serven and Solimano (1993) for details.*

substitution effect of real interest rates on savings dominates the negative income effect since as he said, 'the most important determinant of savings is real income'[3].

A second weakness of the financial liberalisation school as further noted by Thirlwall (1994) is that it implicitly assumed that the supply of loan is dependent on the volume of deposits held by banks. In other words, it treats the supply of credit as exogenous. But banks however, have the power to create credit; they can expand their loans despite their reserves and their deposits by borrowing from the central bank. Thus, in a credit money system, the supply of credit is rather endogenous. Within this framework, what is important is not incentives for saving but incentives for investment. This being so, high interest rates may actually discourage total savings by discouraging investment[4].

Another criticism is that while the Mckinnon-Shaw school considers rising deposit rate as growth enhancing through increase credit availability, and leading to reduced inflationary pressures with an initial discrete increase in money stock, in contrast, neo-structuralists (Taylor, 1983; Van Wijnbergen, 1983), postulate that the short run effect of higher interest rates and financial market liberalisation is stagflationary; raising interest rates, coupled with

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[3] *The argument relates to those of Keynes, where he refutes the notion of savings as a function of interest rate as opposed to the classics. (See Victoria Chick; 1983, p.183).*

[4] *This is the Keynesian or post Keynesian riposte to the financial liberalisation theory. The work of Davidson (1986) and Asimakopulos (1986) is a representative of this line of argument. (See Thirlwall; 1994, p. 279).*

devaluation, accelerates inflation by increasing the cost of working capital and import prices. Thus, in real terms, the supply of credit to finance investment falls and therefore leads to lower economic growth. In fact, Van Wijnbergen (1983) reiterated the possibility of a reduction in total credit if higher deposit rates in the formal financial system draws assets from the relatively efficient curb markets towards banks where credit multipliers are low, because reserve requirements imposed on the banking system are viewed as a leakage in the intermediation process. The total supply of loanable funds available to business firms would fall and the curb-market rate (i.e., rates charged in informal financial units) would rise. A rise in the latter rate would increase cost of working capital, and this could lead to a further reduction in output, thus deterring investment.

In accordance with these criticisms, many studies including Gupta (1987), Giovannini (1983), Oshikoya (1992) and Peninah (1995) have given mild support to financial liberalisation. Some like Kuiwali and Skully (1991); Diaz - Allenjandro (1985); and the World Bank (1989) argue that financial liberalisation in some developing countries did not materialise as predicted. These studies indicate that some developing countries in the process of financial reforms and liberalisation experienced severe financial crash and distress. Thus, the Mckinnon-Shaw hypothesis which argues that a positive real interest rate at

its free competitive equilibrium institutes a `virtuous' cycle of higher savings-investment-income, is put to question. Therefore, the issues around which the controversy revolves are: (i) the effects of interest rates on savings, investments and the rate of growth of output, and (ii) the perceived causal relationships among these variables. Although many accepted the direction of causality advanced by the financial repression hypothesis as received wisdom, in the final analysis this question has to be resolved on the basis of empirical evidence.

The evidence accumulated so far suggests that the causality underlined by the Mckinnon-Shaw hypothesis is hard to validate empirically at the aggregate level. Thus, Collier and Mayer (1989) as noted by Machiko Nissanke (1994), concluded that:

> "the basis for supporting financial liberalisation can, at best, be described as unproven. The relation of savings to interest rates is questionable, and the benefits of improved resource allocation at higher interest rates seem to have more to do with the role of financial institutions than interest rates per se. Empirical studies that attempt to draw inferences from reduced form cross-sectional relation between real interest rates and growth rates in different countries for the effects of liberalisation are particularly suspect. And even if the relation is valid, the direction of causation is unclear. It may merely reflect common independent factors (such as the rate of inflation), rather than an influence of interest rates on growth."

Indeed, in view of this statement, one is forced to conclude that certain conditions are necessary for a successful liberalisation. Thus, (Fry; 1989, Mckinnon; 1991) argue that two prerequisites for successful financial liberalisation are macroeconomic stability and adequate prudential supervision of the banking sector. Based on these facts and the idea that if financial liberalisation does not increase aggregate savings, its positive impact on development must come through a more efficient allocation of the society's real resources which raises the productivity of investment; several studies have been undertaken to examine the impact of financial liberalisation and conditions on economic development through the mobilisation and allocation of savings and investments. The role of real interest rates is very important in this process. As Malcolm et al., (1987, p. 238) acknowledged, the concept of real interest rates is central to the understanding of the implications of financial policy for growth and development.

1.3 THE CONCEPT OF REAL INTEREST RATES

Interest rates may be viewed as prices of financial assets (Malcolm et al., 1987) or as the price of money or of loanable funds (Pawley et al., 1982), (Clunies, 1991). The nominal interest rate on loans is the stated rate agreed between the lender and borrower at the time of contracting a loan, whereas that

on deposits is the rate offered to savers at the time deposit is made. Thus, the nominal rate can be referred to as an obligation to pay (on loans) or a right to receive (on deposits) interest at a fixed rate regardless of the rate of inflation. A critical examination of the different definitions of interest rates above brings out some theoretical implication of interest rate determination.

The traditional theories consider interest rates as the price of savings determined by the demand and supply of loanable funds. It is the rate at which savings are equal to investment[5] in capital markets. The loanable fund theory as opposed to Keynes's liquidity preference theory thus argues that the interest rate is determined by non-monetary factors. It assigns no role neither to the quantity of money or level of income on savings, nor to institutional factors such as commercial banks and the government.

The liquidity theory on the other hand looks at interest rates as the token paid for abstinence and inconveniences experienced for having to part with an asset whose liquidity is very high. It is a price that equilibrates the desire to hold wealth in the form of cash with the available quantity of cash; and not a reward of savings[6] . Interest rate is considered as a function of income and should have

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[5] *According to Keynes's understanding, the classical theory postulated that the rate of interest was determined by saving, which was positively related to it and by investment, which was negatively related to it, and Keynes accepted the latter relationship with a sense of certainty now lost (Chick, 1983, p.183).*

[6] *This explains why Keynes's liquidity preference theory is most frequently cited for rationalising the low interest rate policy; assuming that savings is generated by capital formation and not interest rate (Nissanke, 1994).*

no effect on savings. Chick (1983) supports this view by acknowledging that "savings as a function of the rate of interest was not accepted by Keynes since he considered income as the crucial determinant of saving". The liquidity preference therefore considers the rate of interest as playing a primary role in the mobilisation of financial resources and ensuring the efficient utilisation of resources in the promotion of economic growth and development (Ngugi, 1997).

From the traditional theory, nominal interest rate adjusts fully to expected rate of inflation leaving the real interest rates unchanged. However, Keynes's liquidity preference supposes that there is very little to tie the nominal rate of interest to anything objective as long as opinion believes its proper level to be 3 percent (Chick, 1983, p. 228). In his works, Irving Fisher held the same sentiments with the classics or traditional theory. He believed that there is a positive relationship between expected future price increase and nominal interest rate. For instance as observed in the quantity theory of money an increase in price causes the nominal value of trade to rise resulting to an increase in the demand for money. This situation will normally lead to an increase in nominal interest rate.

Modern Monetarists have popularised the approach of Irving Fisher to this problem (Chick, 1983). Therefore, the link between nominal interest rate

and prices or inflation implies lenders are very cautious in their decisions to avoid loss in value of money. For instance if the rate of inflation is expected to be, say 5 percent, no one would lend at less than 5 percent plus some acceptable real rate of return. Irving Fisher's theory is, however, controversial particularly when it is interpreted as suggesting a constant real rate. As noted by Ngugi (1997) earlier studies estimated the Fisher's effect i.e., the amount of change in nominal rates resulting from a change in the expected rate of inflation by basing their theoretical expression on nominal interest rates as the sum of the real interest rates and expected inflation and a residual term i.e.,

$$i_t = rr_t + \pi_t^e$$

Where, i = nominal interest rates

rr = real (ex-ante) rate of interest/expected real rate

π^e = expected inflation rate.

t = time period

For empirical implementation, independent data on either the real rates or expectations of inflation were lacking. Specific hypotheses were then maintained about real interest rates and formation of expectations. It was assumed that real interest rates being a function of deeper economic variables like marginal rate of substitution and transformation and the rate of time preference, moved or adjusted slowly, thus approximated as a constant (Ngugi,

1997). Thus, studies have estimated the magnitude of the Fisher's effect and found that nominal interest rates are extremely slow to adjust to inflation such that there is a tendency for inflationary rate to expand the gap between nominal and real interest rates. Tobin (1965) modified Fisher's conclusion, arguing that inflation reduces the demand for money balances, lowering the real rates of returns such that, the real rate rises by less than the inflation rate. However, an example of the Fisherian effect as concerns real interest rate calculation cannot be neglected. Two depositors in different countries in otherwise identical circumstances, except that in one country the inflation rate is expected to be 5 percent and 10 percent in the other will have different real rate of return of their deposits. If both receive nominal interest rates of 6 percent, then the real rate in the former is a positive 1 percent, and minus 4 percent in the second case. The prospective value of the deposit will rise in the former and fall in the second.

At sustained high rates of inflation, say 30 percent per year, borrowers on the other hand will be quite willing, indeed eager, to pay nominal interest rates of 30 percent per year and this implies that loans are costless. They can be repaid in money with purchasing power well below that at the time of borrowing. Where legal ceilings do not apply on nominal interest rates (i.e. financial system is not repressed) they will tend to adjust as expected inflation rises and falls. However, if ceilings on nominal interest rates are widespread and

infrequently changed to reflect inflation rate, in such circumstances this rate will exceed the nominal interest rate and negative real interest rate results. This implies the non-indexation of interest rates. The indexation of interest rates is expected to provide for steady real rates in order to create a stable environment for investment, intermediation and possibly savings (Clunies 1991, p. 239). Since one notable advantage that has been mentioned often is the low inflation level that prevails in CFA countries as pointed by Allechi and Niamkey (1993), then positive real rates of interest should prevail in these countries including Cameroon, especially as the financial markets have been liberalised to some extent. When expected inflation rates are relatively low, the real interest rate can be calculated by merely subtracting the expected rise in prices from the nominal interest rate as expressed in the Fisher equation above. Thus, for an annual inflation rate of 10 percent and a nominal interest rate of 12 percent, the real rate will be positive 2 percent.

However, reference to the real interest rate on deposits or other financial instruments can be misleading. This is because at any given time, there will be a number of different nominal deposit rates in force in any economy. For instance, nominal interest rates on shorter term (say, three-months) deposits will generally be lower than those on longer term (say, one or two-year) deposits. Nevertheless, the real rate can be computed for any class of deposit or loan in a

similar fashion as expressed in Fisher's equation. Since a relationship exists between all interest rates one can therefore speak of the `real' rate, meaning the one that has been selected as an indicator of the structure of interest rates (Sergio and Dawith, 1986). In economies, experiencing high inflation and expectations of continued high price-increase rates, the Fisher's equation does not provide a reliable measure of real rates of interest, which states that the differences between nominal interest and inflation rate is the real rate. A formula that more accurately recognises that the corrosive power of inflation on nominal asset values works not instantaneously, but through out a year is then provided (See Malcolm et al., (1987)) as:

$$rr = [(1 + i) / (1 + p)] - 1 \qquad [1.1]$$

as opposed to

$$rr = i - p \qquad [1.2]$$

Where rr is the real rate of interest, i, the nominal interest rate and p the inflation rate.

For example, with the rate of inflation near 100 percent but the nominal interest rate on one-year time deposits through most of the year given as no more than 50 percent, using equation (1.2) gives a real interest rate on deposits of a minus 50 percent, assuming that inflation was expected to continue at near 100 percent rates. However, correctly measured to reflect the steady, not precipitous action

of inflation on nominal values, the real rate using equation (1.1) is minus 25 percent. This means that depositors who place their money in a time deposit, would by the end of the year suffer a decline in asset value of 25 percent, even though nominal rate is a positive 50 percent. In another way, depositors pay a tax of 25 percent on their interest-bearing money balances even if they pay no conventional taxes on their nominal interest income on bank deposits. In cases where they pay such taxes, the tax (at rate t) must also be deducted, from the nominal rate in order to arrive at the real deposit rate net of taxes, given as

$$rr_n = \frac{[1 + i(1 - t)]}{1 + p} - 1 \quad \ldots [1.3]$$

Most countries impose taxes on interest income with Cameroon inclusive. In this study, we considered equation (1.1) for our calculation of the real rate.[7]

1.4 THE ROLE OF FINANCE IN DEVELOPMENT

The nexus between financial development and economic development has been well recognised in the literature for more than twenty years (Rodney, 1992). Furthermore, the potentially vital contribution of financial intermediation to economic development has long been recognised in the works of many economic historians, including Schumpeter, Gerschenkron, and Cameron, even

[7] *The non-availability of time-series data on such taxes prevented the use of equation (1.3).*

though the dynamic interactions between finance and development are admittedly intricate and subtle (Nissanke, 1994) and this issue became so overwhelming that the World Bank devoted its 1989 World Development Report to 'Financial Systems and Development' (Allechi et al., 1995).

In the literature on financial liberalisation, Mckinnon (1973) and Shaw (1973) including Gurley and Shaw (1967) are recognised among economists as the pioneers in the treatment of financial development as a process and strategy of economic development[8]. However before then, a systematic analysis of the relationships between financial development and economic development had been published by many economists of which Patrick's (1966) work that specifically looked into the above causal relationship could be cited. Explicit or implicit in all these studies is the idea that, the financial system enhances economic development, at least in the early stages, by improving efficiency (Rodney, 1992). In recent years, programmes of financial liberalisation have been initiated on the idea that a market based financial system can most effectively mobilise savings, making them available to financial projects. In developing countries, the issue has been examined in the context of 'financial repression', a situation in which there are legal restrictions imposed on the financial system (Allechi et al., 1995).

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[8] *Rodney L St. Hill (1994, p. 161) op cit.*

Mckinnon (1973) and Shaw (1973) advocated the removal of these restrictions, or put differently, the two authors advocated the financial liberalisation as a growth promoting policy. In the debate that has followed since, the functions of finance in the savings-investment process are underlined as being an effective conduct for (i) the mobilisation and allocation of capital and (ii) the transformation and distribution of risks and maturities. Financial intermediaries and markets are assumed to have the role not only of mobilising investible resources, but also ensuring the most efficient transformation of mobilised funds into productive capital. It was argued that through diversification of investment and access to greater information, financial institutions should be able to intermediate risks and transform resources between savers and investors most efficiently (Nissanke, 1994). Therefore, economic growth is seen as being associated with the expanding size and increasing complexity of the financial structure (financial deepening). Financial policies should have substantial effects on the pace as well as the direction of development. Thus, it may well be that financial development is a prerequisite, if not a major determinant of the take-off into self-sustained economic growth (Galbis, 1997).

A number of studies have been carried out all supporting the fact that existing financial conditions have a serious impact on economic growth and

development through the mobilisation and distribution of savings into productive investment. However, as noted by Ojo (1984), these studies were only brought into focus after the works of Gurley and Shaw (1975). Prior to this time, works on economic growth had traditionally focused on the real aspects of the rate of growth of output or the rate of growth of capital formation to the neglect of the financial aspects of economic growth (Ogungbenro et al., 1996). Nevertheless, if one can observe the economic history of most countries, it would be realised that no country has successfully developed without an appreciable growth in the financial sector[9]. Many researchers including Jung (1986); Fry (1982, 1988); Long (1983); de Melo and Tybout (1986); Montiel (1995); Libby (1991) and Oshikoya (1992) have confirmed this assertion with some empirical facts.

However, it was Patrick's (1966) work on the direction of causal relationship that initiated a new dimension in the economic and financial studies of developing nations as to which aspect of the economic segment or sector should be emphasised for development first. Following Patrick's two possible patterns of causality; demand `following' and `supply-leading', most Keynesian economists of the 1950s and 60s appear to have subscribed implicitly to the

[9] *There is at least some correlation between financial growth and economic growth as hypothesised in the financial liberalisation theory of Mckinnon - Shaw (1973).*

demand-following pattern[10]. But Patrick (1966) while supporting the 'supply-leading' as opposed to 'demanding-following' process, emphasised that the development of the financial system not only accommodates but even induces growth by generating incentives to savers to increase their rate of savings, and to entrepreneurs to invest more and to producers to work harder. However, this supply-leading aspect was again supported following the publication of two important books: Mchinnon (1973) and Shaw (1973), and these authors have been recognised as pioneers of the financial liberalisation school.

As a way of providing empirical verification of Patrick's theory, Jung (1986) investigated the quantitative evidence of the causality in 56 developed and developing countries. He employed two alternative measures of financial development; the ratio of currency to GNP and the ratio of broad money to GNP, in order to test their relationship with the growth of per capita GNP. Jung concluded that "... his finding indicated a moderate support for the supply - leading phenomenon in developing countries. The causal direction, both unidirectional and simple, running from financial development to economic growth is more frequently observed than the reverse" (p. 341). In addition, Jung found that developing countries were characterised by the causal direction

[10] *In the Keynesian macroeconomics popularised in the general theory, the investment/savings - liquidity/money framework assumes a central place with the interest rate as an endogenous variable which is determined by income or money and not saving. In the general theory, the level of income determines savings and the rate of interest determines where it is placed Chick (1983).*

running from financial to economic development, and for developed countries by the reverse causal direction in the case of the currency ratio. In the case of the broad money ratio, causation was from financial intermediation to economic growth for both groups of countries.

In recent years, since the seminal works by Mckinnon (1973) and Shaw (1973), there has been a considerable amount of empirical research into the workings of financially repressed economies and the beneficial effects of financial liberalisation (Thornton, 1991). However, in the pre-1990 period in Cameroon, as typical of most developing nations, the situation of financial repression as enunciated by models constructed by Mckinnon (1973) and Shaw (1973) in their separate studies, were prevalent. The institution of holding interest rates below their market equilibrium levels and using non-price rationing devices to allocate investible funds constitute the major anti thesis of the financial liberalisation policies embarked upon in the BEAC zone in the wake of the structural adjustment.

Prior to the removal of the various administrative regulations in the economy of most countries, researchers have investigated the effects of such regulated financial conditions on variables such as savings, investment and growth. Kapur (1976) analysed the effects of keeping interest rates below the equilibrium level on the above mentioned variables in developing countries and

found out the disequilibrium interest rate system causes a credit squeeze which, in turn, negatively affects investment and growth. The implication is proclaimed in the Mckinnon-Shaw hypothesis, whose claim is that a repressed financial system or below equilibrium interest rates interferes with development in a number of ways: savings vehicles are underdeveloped and/or the return on savings is negative or unstable; financial intermediaries that collect savings do not allocate them efficiently among competing uses; and firms are discouraged from investing because poor financial policies reduce the returns to investment or make them excessively unstable. In contrast, liberalisation on the financial sector from interest rate ceilings and other restrictions facilitates economic development and growth because higher interest rates lead to increased savings and a more efficient allocation of capital[11] . However, very few studies have empirically tested the increased efficiency in capital allocation especially by directly relating to the efficiency of investment as affected by the real rate of interest (Thornton, 1991).

Fry (1978, 1979, 1980, 1989); Asian Development Bank (1985), Warman and Thirlwall (1994) and Libby (1991) had made some progress to the above line of arguments. According to Fry (1978, 1979) the ratio of domestic

[11] *Financial institutions cannot charge higher interest rates (risk primia) on promising but risky projects under circumstance of negative real interest rates for fear of default. This is one of the characteristics of financially repressed economies advocated by Mckinnon-Shaw (1973) which causes inefficiency (Nissanke, 1994, p. 163).*

savings to GNP and the rate of economic growth are influenced positively by real interest rates and a positively significant relationship also exist between real interest rates and the incremental capital-output following the liberalisation of the financial sector. The latter empirical test which expressed a positive correlation between real interest rates and the efficiency of the investment as measured by ICOR was also supported by the Asian Development Bank (1985). The long run estimate of the model used by these studies is expressed as follows:

$$ICOR = a_1 + a_2 r + \Sigma a_i x_i + \varepsilon \qquad [1.4]$$

Where ICOR is the incremental capital-output ratio, r, the real deposit rate, x, other variables whereas a_1, a_2 and a_i (i = 3...n) represent parameter coefficients.

On the other hand, by using an econometric switching model, Libby (1991) and Warman and Thirlwall (1994) attempted to measure the equilibrium interest rate but the latter found none and concluded that if it existed at all it would be below the range of real interest rate in the sample period, which included significantly negative rates in many years. Furthermore, Clarke (1996) refuted categorically that empirically no definable equilibrium rate exist in an economy. However, the equilibrium interest rate may not be that which equate the demand and supply of loanable funds (Stiglitz and Weiss, 1981). Thus a

possibility exist for one as Libby (1991) in his part found a significant equilibrium interest rate and concluded that investment is positively related to the real interest rate when the latter is held below the equilibrium rate.

But, below the equilibrium (a proxy for a repressed financial system), credits should be rendered inadequate as Kapur (1976), Fry (1978, 1979, 1980) and others together with the Mckinnon-Shaw (1973) model have demonstrated. Nevertheless, the implication expressed in Libby's (1991) work is that even with repressed finance, a flexible and/or rising interest rate should raise savings and thus credits for investment, thereby stimulating growth. This may be why some studies empirically suggest that high economic growth can be sustainable in environments of negative interest rates or repressed finance (Agarwala 1983); Lanyi and Saracoglu (1983). However, Libby's (1991) work has some loopholes which need further investigation as this study intends to do. This is because, his results indicate that stabilisation of the real deposit rate of interest at a low positive level is warranted if investment spending is to be maximised. As he concluded, "the econometric results suggest that over the last twenty years, interest rates have at times been below and at times above equilibrium. Hence, interest rate policy has at times fostered and at times hindered investment spending and growth" (p. 163). The model he used was a linear spline investment function of the form

$$I = \alpha + \beta r + \theta(r-r_o) + \Sigma\delta_i y_i + \mu \qquad [1.5]$$

Where I is private investment, r is the real deposit rate and r_o the equilibrium deposit rate.

Like Fry (1979) and the Asian Development Bank (1985), Libby (1991) nor Warman and Thirlwall (1994) did not consider the efficiency or quality of investment as affected by the interest rate policy even though the former also, never hypothesised an equilibrium situation (that is to investigate the effect of interest rate on the efficiency of investment when the latter is below or above the equilibrium).

Pertaining to Libby (1991) and others like Warman and Thirlwall (1994), it would appear that their conclusions were made on the basis of conjecture that above the equilibrium, the real rate of interest will be negatively correlated to investment and growth. This conclusion contradicts what proponents of financial liberalisation advocate because higher real rate of interest, especially above the equilibrium (a proxy for financial liberalisation), should foster growth through increased savings and thus credits for investment projects. However, such a statement might be supported by results of Chandarvarkar (1971); Mikesell and Zinser (1972) and others who found no relationship between the level of savings and the rate of interest, and also to what Felipe and Rodrigo

(1993) stated that a range exist within which the correlation between interest rates and private investment is unclear.

According to the key relations of financial liberalisation theory (Oshikoya, 1991; Dornbusch and Reynoso, 1989; Montiel, 1995 and others) which form the basis of our impact assessment, the followings are observed.

- Increased real deposit rates should raise the saving rate;
- There is a positive correlation between the degree of financial deepening and economic growth;
- Increased real interest rates will raise the level of investment;
- Increased real deposit rates will promote economic growth through improved efficiency in capital stock.

We expect that Libby's (1991) conclusion followed or assumed the opposite sense, that is, the efficiency of investment and growth should be positively correlated to interest rates held above the equilibrium (proxied as conditions of financial liberalisation). This is because higher rate of interest especially above the equilibrium should raise the productivity of new investments since as Malcolm et al., (1987) asserts that `negative real rates of interest (which we proxy as below equilibrium) tends to lower the marginal efficiency of investment'. Therefore, the efficiency of investment representing the quality of

investment as affected by the interest rate policy needs a thorough empirical investigation in order to actually understand the proclaimed benefits of financial liberalisation as well as the crucial link between investment and growth through their relationship with the real interest rates.

Many authors including Bahtia and Khatkhate (1975); Alawode and Ogungbenro (1994); Oshikoya (1992); Montiel (1995); and Dooley and Mathieson (1987), demanded for the deregulation of the financial market, but none has actually tested the efficiency of investment as affected by the rate of interest in a repressed as well as a liberalised financial system. This makes it impossible for policy-makers to easily understand the crucial link between investment and growth in situations of disequilibrium interest rates. Furthermore, it is actually difficult to tell whether financial liberalisation promotes growth or not if one critically looks at Libby's (1991) work of which a growth nor incremental-capital output ratio (ICOR) equations were not developed.

Nevertheless, owing to the fact that financial system indicators are significantly correlated to economic growth through investment and efficiency (Montiel, 1995; Oshikoya 1992; King and Levine 1992; Fry, 1979; Asian Development Bank, 1985), economic growth and the level of real interest rates should always be positively related at below or above the equilibrium rate. This

is because, depending on the level of development and macroeconomic stability, the possible effects of financial liberalisation on growth work in three channels according to Montiel (1995), and Oshikoya (1992). These include:

* Improved efficiency of intermediation through a reduction of the cost of financial intermediation.
* Improved efficiency of capital stock since funds are channelled to high productive projects as the financial system becomes efficient.
* Increases in the national savings rate as real interest rates rise or becomes positive.

Accordingly, most of the studies reviewed and which have based their arguments on the Mckinnon-Shaw hypothesis which was a new orthodoxy in the 1970s and 1980s had similar conclusions though with varying degree of successes in the area of financial liberalisation. For instance, Peninah (1995), Ogungbenro et al., (1996) found savings not to be responsive to real interest rates, Oshikoya (1992) gave a mild support for the financial liberalisation hypothesis and finally others indicated that financial liberalisation instead resulted to financial crash and distress (Kuiwaili and Skully 1991; Diaz-Allenjandro, 1985 and the World Bank, 1989). Following the Mckinnon-Shaw hypothesis which argues that the real rate of interest which reflects capital scarcity is a more effective rationing device to promote greater investment

efficiency, coupled with macroeconomic stability and certainty at the level of future interest rates and exchange rates (Nissanke, 1994; Mckinnon, 1991; Dornbusch and Reynoso, 1989), we expect the level of economic growth to be positively related to real rates of interest even at situations where the level of savings is low or interest inelastic due to improved efficiency in capital allocation.

Fry (1989) for example, asserts that "an increase in the real deposit rate of interest towards its competitive free-market equilibrium level will be accompanied by a reduction in the inflation (due to an increase in the supply of credit and thus a fall in loan rate) and an increase in the rate of economic growth" Fry (1988). Thus, the Mckinnon-Shaw hypothesis view the quantity as well as the quality of real investment as positively related to the rate of interest (Roe, 1982; Thornton, 1991). Therefore, the secondary effect of raising interest rates is higher economic growth and savings through the increased average efficiency of investment (Fry, 1979; and Asian Development Bank, 1985). However, the efficiency of investment still needs to be rightly tested by considering situations of both below and above equilibrium interest rates in order to have a better insight of the links between financial liberalisation and investment or growth. In this light then, the setting of interest rates which require an understanding of the above relationships cannot be done accurately

without an idea of the links existing between the efficiency of investment and interest rates below or above the equilibrium rate. Furthermore, it should be understood that whether a financial system is repressed or deregulated, it is always possible to attain an equilibrium at the level of interest rate though such a rate may not be considered as a true market rate.[12]

However, referring to the notion of a hypothesised equilibrium, most researchers as mentioned above, among whom are Libby (1991), Naylor (1985) and de Melo and Tybout (1986) might have failed to imagine that the negative effect of investment may be offset by the positive productivity effect of investment when the real rate of interest exceeds the equilibrium rate. Others like Fry (1978, 1979); Kapur (1976); Montiel (1995); Oshikoya (1992); etc., and even the Mckinnon-Shaw model did not think even about a hypothesised equilibrium situation but relied more on interest rate rising towards its market clearing level. Thus, no previous work has empirically analysed the impact of the interest rate policy on overall growth in situations of both repressed and deregulated finance by hypothesising an equilibrium at the level of the interest rate variable. The model type and reasons for its introduction in this study is explained graphically below.

[12] *Stightz and Weiss (1981) have argued that in markets characterised by imperfect information (an apt description for most developing countries) the 'equilibrium' interest rate may not be that rate which equates the demand and supply of loanable funds.*

The model of financial repression suggests differing impacts of changes in the interest rate on investment spending in accordance with whether the real interest rate is below or above the equilibrium. But many studies on the effect of financial liberalisation on the economy that base their arguments on the Mckinnon-Shaw (1973) model, generally focus on the desirable consequences of raising the real interest rate towards the equilibrium and do not consider the empirical probable effects of an above equilibrium interest rate. It was Libby (1991) who foresaw that, equally important too, interest rates should not be raised to levels above the equilibrium as illustrated in figure 1. SS represents savings supply and II investment demand. Assume that ro is the equilibrium rate of interest. In figure 1a, at interest rates below r_o, realised investment is constrained by shortage of savings whereas at interest rates above r_o savings exceed what is necessary to finance desired investment. Thus, as the interest rate rises towards r_o, realised investment is expected to increase due to increased savings and hence credit availability.[13] Beyond r_o, realised investment is expected to fall as the economy moves along the negatively-sloped investment demand curve.

[13] *This is the notion of the Mckinnon - Shaw complementarity hypothesis between savings and investment.*

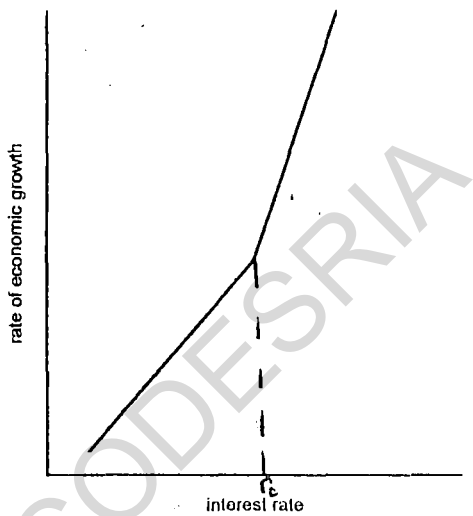
Figure 1

(a) (b)

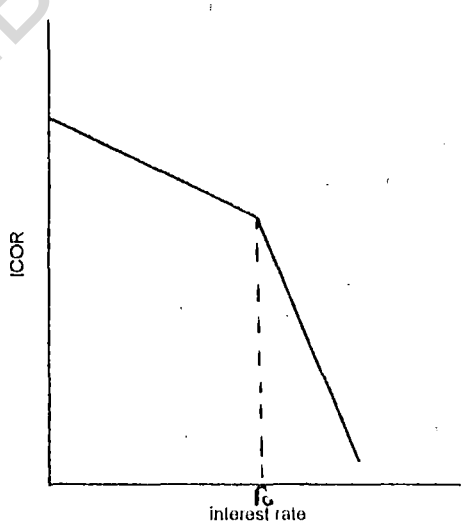
From the fact exhibited in figure 1a, Libby (1991) concluded without an empirical test that growth would first increase with r up to r_0 and then decrease. This situation is described in figure 1b. The graph which represents the rate of economic growth as affected by the interest rate is obviously a piecewise model or linear spline function with two distinct pieces[14]. However, this study proposes that based on the Mckinnon-Shaw hypothesis, if a well functioning financial sector stimulates investment and raises the average rate of return on investment projects receiving the loans, then there should be no reason for growth to decrease. This is because, above equilibrium interest rates (proxied in the model as periods of financial liberalisation) rising interest rate should keep on increasing financial intermediation efficiency as well as the quality of investment. Secondly, as shown by Stiglitz and Weiss (1981), an increase in

[14] *See section 3.1.3 for details on piecewise or spline models.*

interest rate especially above the equilibrium will generally increase the riskiness of the potential projects. As such, only profitable projects will have to be financed and investors with safer and unprofitable projects might refrain from seeking loans.[15] Therefore the productivity or efficiency of investment should rapidly increase when the interest rate rises beyond r_o to offset the negative effect of investment. The graphical illustration of these facts are shown in figures 1c and 1d below.



(c)



(d)

The efficiency of investment is measured by the inverse of the incremental capital output ratio (ICOR). In figure 1d, ICOR is inversely related to the interest rate with a steeper gradient beyond r_o. This implies the rate of economic

[15] *The situation is referred to as adverse selection and must be avoided by credit control (Virmani, 1982), cited in Tawa (1993). Thus the success of financial liberalisation theory requires moderate financial repression where interest rates are managed to make sure that firms in financial distress do not borrow at any rate to remain alive or pay wages.*

growth should exhibit an increasing trend as observed in figure 1c rather than the upset V-shape predicted by Libby's (1991) model expressed in figure 1b.

To sum up, it is in this background that we have conducted empirically an investigation of the impact of interest rates on savings, investment and growth in periods of repressed and liberalised financial systems. With the results, policy-makers may be able to know whether moderate financial repression or complete liberalisation of the financial market is necessary. This is because, for improved efficiency of capital stock to occur, which requires that only productive and risky projects be undertaken (Montiel, 1995; Oshikoya, 1992), the monetary policy and the interest rate should be managed in a way that credit does not rise rapidly to bail out firms that should be pushed out of operation since firms in financial distress will want to borrow at any rate to remain alive and pay wages (Felipe and Rodrigo, 1993). The implication is that, in connection with low interest rates, neo-liberalists notably Mckinnon and Shaw (1973) who believe in the effect of price and intermediation on financial markets, called for an increase in interest rates for reasons of increasing the level of credit to firms.

1.5 CONCLUSION

After having briefly exhausted the concepts of financial repression and financial liberalisation, and the implication of real interest rates, one may have observed that the latter is critical in determining the extent to which the financial system is able to mobilise and allocate savings into productive investment. However, many theoretical works have been carried out on the role of the financial sector in promoting development and growth as reviewed above. But this study still identifies some short-comings which need empirical evidence.

Our observation is that with reference to the reforms made by BEAC in general and the Cameroon government in particular in the financial sector as well as in the real sector, a better understanding of the interest rate policy and its effect on savings, investment and growth is worth estimating quantitatively, since interest rate setting is a better policy option. This is because, it may be that setting the latter too high may be as detrimental to economic health as setting them too low.

CHAPTER TWO

THE CAMEROONIAN FINANCIAL SYSTEM

2.1 INTRODUCTION

The Cameroonian financial system remains similar to any that is found in all the countries of the franc zone (Poemi, 1980), though some improvements have been observed in the crisis period (Grozinger, 1989). The system comprises of credit institutions of public nature, commercial banks and non-bank financial institutions (see table 2.1) which could be termed as formal financial units. Other institutions including savings and credit co-operatives, credit unions, NGOs engaged in financial activities and pension schemes etc., may be classified as semi-formal institutions. Lastly, money lenders, tontines or njangis and other self-help associations constitute the informal units. Thus, in accordance with the commonly used typology (Pieter and Reinhard, 1991), three segments of the financial markets exist in Cameroon. This study concentrates on the banking sector as an example of the formal financial unit and its evolution reflects the political and economic history of Cameroon.

Until the mid 1980s, Cameroon banks had succeeded in mobilising significant bank deposits from the private sector. In addition, national banking

establishments held significant deposits from state enterprises and national oil companies. The banking scene was dominated by French merchant banks but later in the early 1980s, American banks also came up. However, following the economic crisis in the second half of the 1980s, a great number of banks in the country experienced liquidity problems and became insolvent. This led to the spontaneous closure of some banks and others had to be restructured within the framework of the structural adjustment programme.

Like other developing countries, the financial system of CFA countries are characterised by the co-existence and operation side by side of a formal and informal financial sector. Such a situation is known in the literature as `financial dualism'. For Germidis (1990) and Subrata (1995) the formal sector refers to an urban oriented institutional and organised system dealing with the magnetised modern sector. This part of the financial sector is directly subject to national financial market regulation, (i.e. they make use of the country's legal infrastructure and undergoes strict banking supervision). The informal and semi-formal sector which is by definition non-institutional, deals with the traditional rural subsistence and non-magnetised sphere of the economy (Aryeetey, 1992). However, an urban informal financial sector exists in most major cities in the work place or in the neighbourhood if one considers the case of tontines. The semi-formal sector like the formal financial institutions operate on the basis of a

legal system which is codified and enforced by the state (Pieter and Reinhard, 1991, p. III). In Cameroon like in other BEAC member states, such rules and regulations are codified by the Banking Commission of Central Africa (COBAC) and applies mostly to the formal sector[1] .

The banking system (i.e. formal financial sector) will be assessed later below. However, the semi-formal and informal financial units are also examined in terms of structure and performance. But unlike other African countries, the Cameroonian financial system is heavily affected by its membership in the Franc zone. Allechi and Niamkey (1993) presented the main principles and functioning mechanism of the CFA zone as outlined below.

2.2 THE INSTITUTIONAL FRAMEWORK FOR THE FORMULATION OF FINANCIAL AND MONETARY POLICY IN THE BEAC ZONE

2.2.1 Historical Developments

The BEAC zone constitutes part of the Franc zone member states. It is therefore worthwhile to briefly look at the historical perspective that underlie the Bank of Central African states before delving into the common functioning mechanism of the CFA zone.

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[1] *A recent decree of the Prime Minister now places the Savings and Credit Cooperatives (COOPEC) under the control and supervision of the monetary authorities and COBAC (Cameroon Tribune No. 6685/2974, of September 8, 1998).*

The Bank of Central African States replaced the 'Banque Centrale des Etats de l'Afrique Equatoriale et du Cameroun' (BCEAEC) established following the Agreements concluded between France, the states of Equatorial Africa and Cameroon in 1960 (National Council of Credit of Cameroon, 1975/76, p. 186). Following the Brazzaville Agreements signed on the 22nd and 23rd of November 1972 among the five states of Central Africa (Chad, Gabon, Congo, Republic of Central Africa and Cameroon) on the one hand, and on the other hand, between the said States and France, the Bank of Central African states was set up with a view to enabling the signatories to pursue their monetary co-operation covered both by the unlimited guarantee granted by France to the currency issued by the new institute and greater involvement of member states in the management of their economic and monetary matters. The Brazzaville Agreements were completed by the 'Operations Account' convention signed at Libreville on March 13, 1973, according to which the assets of the Bank shall 'transit' through the French treasury. Monetary co-operation furthermore, signifies and implies French participation in the management of the Bank.

The monetary co-operation organs are, on the one hand, the Monetary Committee comprising Ministers of Economy and Finance of member states, and, on the other hand, the Joint Monetary Committee comprising the Minister

of Finance of signatory states, namely France and the member states who ensure the implementation of the monetary co-operation convention. The new Bank came into operation on April 2, 1973 and initially installed in Paris-France; the central services were transferred to Yaounde, Cameroon on January 2, 1977. Equatorial Guinea became the sixth country to join the union in 1984.

The Bank of Central African States being an African multinational establishment is governed by commercial and banking laws and procedures in the management and control of which France participates in exchange for the guarantee it provides for the currency issued by the Bank. It enjoys full legal status and is in that capacity, entitled to the fullest powers granted to corporate bodies. The first five member states became members of the International Monetary Fund and the World Bank in 1963, and by this adhesion, the BEAC exerts relationship with the two institutions and their affiliates.

2.2.2 Basic Principles Governing CFA Countries

Membership of the BEAC is the most important feature of the CFA countries' financial system such as those found in Cameroon, Gabon and Central Africa. The BEAC defines the exchange rate and banking legislation and the guidelines for monetary and credit policy, just like what BCEAO - the Central Bank of West African countries does. The current members of the Franc

zone belong to two major zones of sub-Saharan Africa: the Economic and Customs Union of Central African States controlled by BEAC and the West African Monetary Union (UMOA) with the Central Bank of West African Countries (BCEAO) as issuing institute. The eight countries of BCEAO are: Burkina Faso, Benin, Côte d'Ivoire, Mali, Niger, Senegal, Togo and recently Guinea Bissau while those making up the BEAC zone are six in number with Cameroon as one of them as earlier mentioned.

The structure and operation of financial intermediation and institutions in these countries are governed by the following four basic principles:

(i) fixed parity between the French Franc and the CFA until January 12, 1994, the parity rate was 1FF = 50CFAF and currently is 1FF = 100CFAF;

(ii) free transfer without limit among member countries until August 1991 when the monetary authorities imposed some restriction particularly between the two zones;

(iii) common reserves - the zone utilises a common exchange rate policy vis-à-vis the rest of the world;

(iv) convertibility of the CFAF into FF through the special operations account opened with the French Treasury not at the Bank of France - for BEAC and BCEAO. Sixty-five percent of the foreign

exchange reserves of all the countries of the zone is kept in the operations account in French Franc.

The convertibility of the CFA franc is guaranteed by the fixed parity with the French franc, and it is the equivalent of the French franc in international currency market although it is not traded there. The convertibility of the CFA franc was partially stopped in August 1993, when the French Treasury stopped repurchasing CFA Franc coming from outside the Franc zone.

From the economic point of view, these principles have important implications. First, the Bank of France is the final leader in all the financial systems of the Franc zone. Secondly, the French Treasury can, in theory, make up without limit, any deficit of the operations account. Thirdly, the Bank of France and the French Treasury are at present the two institutions that have effective monetary sovereignty over the Franc zone as a whole, with member countries being deprived of such a power. Finally, although the French Treasury enjoys sovereignty in the Franc zone countries, the transactions arising from the operations accounts take place at the Bank of France. In addition to that, with the Maastrich Treaty signed in December 1991, restrictions are imposed on national budgets (3 percent of the budgetary deficit of the Gross Domestic Product GDP). Thus, the French Treasury can no longer monetise the deficits of the operations accounts, which makes it possible for the balance of the

operations accounts to be in debt, without the consent of the new European Central Bank.

The above traits distinguish the monetary union of the countries of the Franc zone from all the others operating within the African sub-region. The rate of exchange is exogenous and is not an instrument of monetary policy. This results in the financing of the deficit of the balance of payments, which is unique in the zone, through French guarantee. But the countries of the zone are facing monetary and financial policy constraints[2]. The parity change between the CFAF and the FF, as the one that took place on 12 January 1994, was possible only with the unanimous agreement of member countries and France.

2.2.3 Institutional Framework of the Financial System of BEAC

The banking system in the BEAC zone is composed of the common central bank - BEAC, with headquarters in Yaounde, Cameroon. It is the pivot of all credit institutions existing within the zone and has national branches in each member country. This system is composed of commercial banks, development banks and non-bank financial institutions. BEAC decisions are enforced in all six member countries, and management of the bank is entrusted into the hands of all member states. Three bodies contribute directly or

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[2] *For further details, see Allechi and Niamkey, (1993).*

indirectly to the proper functioning of the Bank of Central African States, namely: the Board of Governors or Directors, the National Monetary Committee and the Headquarters (National Credit Council of Cameroon, 1972/73 and 1973/74, p. 204). However, other supervisory or control bodies also exist and are also examined. The BEAC is therefore, administered by the following organs:

(i) The Board of Directors. This is the supreme organ of BEAC and has as its main task the definition of the general policy of the bank. For instance, it decides on the capital of the bank, adoption of its budget, fixes the rate of discount and rediscount, credits and advances to banks and national treasuries etc.,

The board is headed by the Minister of Finance of each member state with a rotating chairmanship for at least one year. It has 13 members with 4 from Cameroon, 3 from the French Republic, 2 from Gabon and 4 from the other member countries (i.e. a member per state).

(ii) The Governor of the bank. The Governor of the common central bank which is nominated unanimously by the Board of Directors represents the management team of the bank at the top. Thus, the Governor sits at the headquarters, and is assisted by a Vice Governor and the National directors, sees the day to day running

of the bank. The National Directors receive informations on the activities of banks and treasuries and channel them to the Governor. The working of the Bank at the national level is based on the recommendations of two institutions; the National Monetary Committee and the National Credit Council.

(iii) The National Monetary Committees. There exist a national monetary committee for each member state which is presided by one of its members.

This committee is made up of members of the Bank's board of governors and their alternate members, and three other nationals chosen from the financial and economic sectors by the government according to their competence. The Governor of the Bank and two censors or auditors one of which is a French or his representative, assist in the meeting as advisory bodies. The National Director is the spokesman of the committee that meets quarterly to examine the general needs of financing the economy, determines the financial means and proposes to the Board the `Concour globaux' (Global Assistance or allocation). Within the limit of its delegated powers, it fixes the rediscount ceiling granted to banks and the individual limits granted to undertakings under the condition laid down by the Board.

Another body is the college of censors acting as auditors and comprising 3 members from Cameroon, France and that of Gabon representing the other member states. This is a control organ which oversees the execution of the Bank's budget, regularity of its operations and assists in the Board's meeting and that of the National Monetary Committees. In certain cases, decisions of the Board and the Committee are repelled by the censors.

(iv) The National Credit Council (NCC). This council which also assists the Governor exists in each member state and is presided over by the Minister of Economy and Finance. It also comprises representatives of banks, the national director and government economic advisers. The NCC meets once a year and evaluates the financial need of each economy for the short, medium and long-term. It determines the Central Bank's financial credit line allocated to the financial sector of each country, authorises the establishment of new banks and the opening of branches by existing ones.

Like in most countries, BEAC is the main institution empowered to provide the several operational guidelines for all financial institutions in the economies of the zone. In conjunction with COBAC - the banking commission of Central Africa created in 1990, BEAC is the watchdog of the financial

system. The two structures supervise the operation of monetary policy, enforce the statutory obligations and monitor the performance of the banking system. Prior to the creation of COBAC, the Banks and Financial Establishment Control Commission created in 1974 by Presidential Decree was incharge of the supervision of banking activities and the laying down of banking rules and regulations in Cameroon. However, with the convention of January 17, 1992 which harmonises banking regulations in Central African states, COBAC is now the main supervisory body of banking rules and regulations within the zone.

2.2.4 Interest Rates and Credit Policy of the BEAC Zone

Cameroon, like all the countries of BEAC zone, is subject to the general monetary policy measures adopted by the board of governors of the BEAC. In case of any changes in policy prescriptions, all member countries are obliged to the modifications. Thus, up to 1986, because of the existence of satisfactory international reserves in the countries of the zone of issue, the central bank's monetary policy was guided by the desire to promote the economic development of member countries (Report of the NCC, 1987/88, 1988/89 and 1989/90, p. 125). Since then, the deterioration of net foreign assets caused by

the worsening terms of trade led to a change in macroeconomic policy towards a modification of money creation.

Monetary policy in the pre-reform era in the BEAC zone relied on two instruments, namely interest rate determination and credit allocation (Njinkeu, 1997). Commercial banks' refinancing from BEAC was subjected to upper limits determined by taking into account the monetary position of national credit committees, and the extent to which these limits were constraining varied according to the type of credits. However, credit allocation which constitutes the quantitative regulation of credit is not different from direct intervention of which one should note the policy of 'Concour Global' or total allocation. The total allocation decision for each country is defined as the total refinanced credits by the National Monetary Committee for distribution. It is based on the net position at the French treasury, whereby the upper limits for credit according to CFA accords are reduced by 20 percent for those member states that have deficit with the French treasury for more than three months. Nevertheless, in as much as ceilings are defined for commercial banks, national treasuries and individual enterprises also benefit from the credit allocation scheme.

As concerns the instrument of the interest rate policy, various intervention rates existed before the 1990 reform. The previous system had three bank refinancing rates: a normal discount rate, a preferential rate and a

penalty rate. Because of the low profit margins on priority activities, for which the preferential rate applied, commercial banks were reluctant to engage in this category of lending. The reform got rid of the preferential rate and aimed at reducing the gap between credit to state treasuries and the discount rate at the central bank. The changes in the interest rate structure within the zone of issue, took place the same time when the restructuring of the banking system and other financial sector programmes were initiated by the IMF and the World Bank.

The aim of changing the structure of the bank refinancing rate was to achieve a simplified structure of and to liberalise interest rates, increase the profit margin of banks, maintain a positive rate differential with major foreign partners, France and the West African Monetary Union (UMOA), and to adjust interest rates taking into consideration trends in the economic and financial situation. In Cameroon, several important decisions were taken between September 1988 and April 1989 in line with the above action. (Report of the NCC, 1990/91, p. 25). But however, the reform process was stepped up in 1990/91 by the decision of the Board of Governors of BEAC to revise interest rates beginning October 1990. Thus, since 1990, only one discount rate prevails in the zone in as much as a decision was taken to adjust the rate of advances to national treasuries with a one point increase every 6 months, beginning March

1991, so as to align it to the ordinary rate. The same procedure was applied to the penalty rate in order to maintain a uniform rate applicable to both banks and national treasuries.

In accordance with the various modifications, one would speak of a policy of low rates administered by BEAC prior to the 1990 reform, on the assumption that low interest stimulates investment and growth while higher levels do not necessarily stimulate savings. This is the type of interest rate policy advocated by the Keynesian theory, but this has been dropped following a more dynamic monetary policy initiated in the context of the structural adjustment policy and supported by the financial liberalisation theory.

Another instrument of monetary control used by BEAC to ensure that credits allocated are devoted to development activities is the qualitative credit control policy. This policy allows BEAC to support economic operations judged significant to the economy of the respective country. Three schemes were used namely, a preferential interest rate on priority sectors, selective rediscount rate ceilings, and individual ceilings for certain activities and firms. There was no government control of credit in the pre-reform era. Control was made via national credit councils on a bank-by-bank basis. The reform has done away with these controls and relies on monetary programming and a market allocation of available funds. Thus, credit allocation now heavily relies on a

monetary programming which constitutes a substitute for the determination of global ceilings or allocation, that was passive and static and did not consider macroeconomic situations. The monetary programming framework, because it includes GDP growth targets, balance of payments situations and fiscal deficits/surpluses, can signal inconsistencies in the overall economic strategy that is being followed. With this framework, monetary and credit targets are set annually and revised half-way through the year.

The policy of reserve requirement is another direct intervention policy used by BEAC as opposed to `Concour Global' or total allocation. There was also a required reserve limit that was not enforced until 1987. Nowadays, following the procedures taken to secure long-term viability of the reformed banks, specific measures- prudential ratios and legal and regulatory frameworks are required. In the zone of issue there is a liquidity ratio requirement to guarantee that commercial banks can back their short-term liability. Rates vary from country to country (70 percent in Cameroon and Equatorial Guinea; 75 percent in the Republic of Central Africa, Congo, and Gabon; 80 percent in Chad); the target is 100 percent in all countries. A debt to total asset ratio is associated with the liquidity ratio to reinforce bank solvency. Commercial banks are also required to diversify risk according to stated rules. According to this coverage requirement, no bank as of 1990 was allowed to lend to the same

borrower more than 75 percent of their invested capital; a long-term target ratio is 45 percent. In addition, ceilings are 300 percent for the top five biggest borrowers and 800 percent for the combined group of individuals who borrow more than 25 percent of the invested capital.

In sum, BEAC's policy is generally the primary determinant of credit allocation to the union. Consequently, the growth and operations of financial and non banking institutions in countries such as Cameroon, Gabon and other member states are greatly influenced by the policy stance and direction of BEAC. Nevertheless, even though most banks in the CFA zone countries are subsidiaries of French banks, for instance the Banque Nationale de Paris was a parent to the former BICIC; SCB-Credit Lyonnais is a subsidiary of the Credit Lyonnais; etc., the French presence has reduced compared to the pre-reform period (Njinkeu, 1997).

Despite some short comings that Allechi and Niamkey (1993, op.cit) pointed out, one notable advantage that has been mentioned often is a low inflation level that prevails in the CFA countries. For instance, in the words of Devaranjan and de Melo (1987) `Membership in the zone has induced a sense of monetary and fiscal discipline, damping the `stop-go' cycles observed in many developing countries'. However, it would appear to many observers of Franc zone economies that, the so-called advantages of the zone did not actually

accrue any longer after the mid eighties. The low inflation level did not yield high growth. Infact, there was low growth rate that unfolded itself beginning 1986, leading to the economic crisis that revealed the weakness of the financial system underlining the CFA zone monetary operation system. But given the segmented nature of the financial sector, it is appropriate to review the activities of each segment of the sector.

2.3 THE STRUCTURE OF THE FINANCIAL SECTOR IN CAMEROON

2.3.1 The Structure and Performance of the Formal Sector

2.3.1.1 The Financial Structure

Several different types of institutions exist in the formal financial sector in Cameroon. These are examined within the context of the money market. The money market of the BEAC zone went operational in January 1994[3]. However, an unorganised money market existed in the real sense of the terminology since it comprises market for short and medium term loans.

The Cameroonian banking system as of 30 June 1993, had 9 commercial banks with 143 established branches and a number of periodic offices; one public establishment with a banking nature, and 11 non-bank financial institutions, three of which were public (Report of the NCC, 1991/92 and

[3] *Operation pratique du marché Monetaire de la zone BEAC, version 1er Avril 1994, p.1.*

1992/93, p. 40). This network of credit institutions spread over 190 branches and office of which 40 and 53 respectively were in Yaounde and Douala. However, though according to the Report of the National Credit Council of Cameroon, 9 commercial banks existed as at June 1993, presently `7' exist and 6 of them operate in the money market[4] . The network of financial institutions including those under liquidation following the ongoing financial sector reforms[5] are presented in Table 2.1 below. The insurance market also constitutes part of the financial sector.

[4] *The Bulletin du Marché Monetaire No. 35 May 1997, p. 72, indicates 6 that operate in the money market. But two new commercial banks i.e. Commercial Bank of Cameroon and Highland Corporation Bank have also entered the banking scene.*

[5] *For an exhaustive discussion on the restructuring of the banking sector, see section 2.4.*

Table 2.1: Financial Institutions in Cameroon

1 - COMMERCIAL BANKS/DEPOSIT MONEY BANKS

A.B.C - Amity Bank Cameroon
B.I.C.E.C - Banque International du Cameroun pour l'Epargne et le Crédit
C.C.E.I - Caisse Commune d'Epargne et d'Investissement
C.C.P - Centre de Chèques Postaux
S.C.B-C.L.C - Societe Commerciale de Banques-Credit Lyonnais Cameroun.
S.C.B.C - Standard Chartered Bank Cameroon
S.G.B.C - Société Générale de Banque au Cameroun

2 - OTHER ELIGIBLE BANKS

C.F.C - Crédit Foncier du Cameroun

3 - OTHER NON-ELIGIBLE BANKS

C.E.P - Caisse d'Epargne Postale

4 - BANKING INSTITUTIONS UNDER LIQUIDATION

B.C.C.C - Bank of Credit and Commerce Cameroon
B.C.D - Banque Camerounaise de Développement
B.I.A.O.C - Banque Internationale de l'Afrique Occidentale - Cameroun
B.I.C.I.C - Banque Internationale du Commerce et de l'Industrie du Cameroun
B.M.B.C - Banque Meridien-BIAO Cameroun
C.A.C - Crédit Agricole du Cameroun
CAMBANK - Cameroon Bank
F.I.B - First Investment Bank
I.B.A.C - International Bank of Africa Cameroon
S.C.B - Société Camerounaise de Banque
S.G.B.C - Société Générale de Banques au Cameroun*
S.R.C - Société de Recouvrement des Créances

5 - NON-BANK FINANCIAL INSTITUTIONS
C.M.E.P - Caisse Mutuelle d'Epargne et de Promotion
CREMUCAM - Credit Mutuel du Cameroun
FOGAPE - Fonds d'Aide et de Garantie de Credit aux PME Camerounaise
N.F.C.C - National Financial Credit Company
S.C.E - Société Camerounaise d'Equipment
S.N.I - Société Nationale d'Investissements
SOCABAIL - Société Camerounaise de Credit-Bail
SOCCA - Société Camerounaise de Credit Automobile
SOFIREC - Société de Financement et de Recouvrement du Cameroun
SOGEC - Société Générale d'Equipement au Cameroun
SOGALEASE - Société Générale de Leasing
All Insurance companies in Cameroon

* Bank in activity with its insolvent component of balance sheet transferred to the Loan Recovery Company (S.R.C)

Source: Etude et Statistiques Economiques, BEAC (1997, p.403), May

In 1989, the insurance market in Cameroon was shared by 15 companies governed by Cameroonian law and 4 branches of foreign origin. Among the brokers, were 8 general insurance agents, 62 insurance brokers and 61 automobile and sundry damages assessors. However, as of 30 June 1993, 15 licensed companies were in existence with 13 registered under Cameroonian law, and 2 under foreign delegation and one supplementary company. Insurance companies are an important source of domestic savings mobilisation and so, it is interesting to follow the trend in the reserves of the entire insurance sector as a result of the funds they attract. The premium issued which stood at 4122 millions of CFA francs, 2182 and 5961 millions of francs for claims paid and for technical and actuarial reserves respectively, on December 31st 1972 (Report of the NCC, 1972/73, 1973/74 and 1974/75, p. 260), had experienced tremendous increases as of June 1993 marked by a total premium of 35,300 million CFAF. This represented an increase of 756 percent. However, the increase did not fair in the same manner for the various branches with the greatest share of premium coming from the motor insurance followed by life insurance as of June 1993. Finally as to be noted, the evolution of the activities of insurance companies is the same as that of the banking sector which has been plagued by serious financial and administrative difficulties. This explains why

the sector is also undergoing a structural reform as mentioned in section (2.4) of this study.

Another important unit of the formal financial sector is the stock exchange which is still to operate in the country. Reflections are underway in view of creating one (Finance-Infos, 1997). A review of the performance of the formal financial system is of paramount importance.

2.3.1.2 Performance of the Formal Financial System

The parameters used to assess the performance of the sector is the saving behaviour and the financial deepening indexes such as the broad money, M2 and credit to the private sector to GDP ratios. According to Keynes's simple model of income determination, income constitutes consumption plus savings. This notion led Keynes to develop a saving function which depends on income, and this provided the basis of the multiplier effect[6] . The dependence of savings on income is through the marginal propensity to save, defined as the proportion of any small increase in income which is saved. This is as opposed to the average propensity to save, defined as the proportion of income that is saved. Infact, these relationships have been examined for Cameroon by considering the Gross national saving as a percentage of Gross domestic product (GDP).

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[6] *The relationship between savings and income is give as:*
$Y = C + S$, *where* $S = Y - C$
This saving equation can be written as $S = a + s\,Y^d$ *where* S = *saving,* Y^d = *current disposable income;* a = *constant* ($a<1$) *and* s = *the marginal propensity to save* ($o<s<1$), *where multiplier* = $1/s$.

We observe from Table 2.2 that in general, savings rates in Cameroon experienced an increasing tendency from the period 1970 - 1974 to the period 1975 - 1979 and 1980 - 1985 but later declined in the period 1986 - 1990. A salient feature in the Gross national saving rates as a percentage of Gross domestic product (GDP) is the tendency to increase overtime. Another major indicator which characterises the saving behaviour is the Gross capital formation/GDP index.

Table 2.2: Gross National Savings Rates and Resource Gap

(Percent)

Period	Savings Rates	Gross Capital Formation/GDP	Resource Gap
1970 - 1974	7.74	16.85	- 9.11
1975 - 1979	9.26	19.79	- 10.53
1980 - 1985	19.12	23.78	- 4.66
1986 - 1990	15.83	22.27	- 6.44

Source: Adopted and calculated from the World Bank table 1992.

Gross capital formation to GDP ratios are positive and fairly high when compared with the gross national saving rates. As observed in the table, Cameroon's gross capital formation had been increasing with savings rates and dropped to 22.27% for the period 1986-1990 when the savings rate also

experienced a decline. This is a very interesting finding when one relates these savings rates to the balance of the operation accounts held at the French Treasury under the Franc zone agreements.

The policy implication of such a situation especially with the high gross capital formation rates is worth noting. For example, this means that when the operation account is in credit, that is positive, the country can easily borrow money from external sources to increase capital formation. This indicates that, when the account is having a debit balance or is negative, the tendency is for the government or banking institutions to contract debt as the former will be unable to seek for international financing. However, stringent Franc zone rules have made it more difficult to borrow under these circumstances which have correspondingly reduced capital formation or investment.

An examination of the saving-income relationship conducted during the research showed that the marginal propensity to save (MPS) in Cameroon was 0.282, while the Average Propensity to Save (APS) was estimated as 0.129[7]. These figures as well as indices are indicative testimony of the existence of some potential savings within the country's formal financial system. It is very easy with such indicators to deduce the existence or non-existence of the country's potential to save, when a comparison is made between the MPS (or

[7] *The estimates were calculated using data from World Bank table, 1992.*

the income elasticity of saving) and the APS. There is therefore some potential for saving if MPS is greater than the APS. But if on the other hand, the MPS is equal to APS, we have stagnant saving; and negative saving potential when the MPS is less than the APS. In this study, it was found that the marginal propensity to save exceeds the average propensity to save in Cameroon. Although the difference is not great, the conclusion is that there exists potential savings in the Cameroon economy following the estimates got.

We have been talking, however, about the importance of global savings and its relation with global income. But savings may be channelled into the banking institutions, in which case mention is made of financial savings or kept for the acquisition of physical assets. The Mckinnon-Shaw school points out that understanding the dynamic role of finance for economic growth is critically dependent upon the perception of the relationship between money and physical assets. Based on this it would be necessary to review the importance of distinguishing between liquid and physical assets which both constitute global savings. In the conventional neo-classical growth model, money is seen as a substitute for physical capital and productive investment and real money balances are substitutes for physical assets in wealth-holders' portfolios (Tobin, 1965). In contrast, Mckinnon-Shaw emphasised the complementarity between monetary or financial assets accumulation and physical capital accumulation.

They argue that real money, consisting of all financial assets, should be treated as a factor of production which enhances efficiency and productivity. This explains why the financial depth of Cameroon needs to be examined. As Malcolm et al., (1987, p. 346) put it, 'the growth in the real size of the financial system is primarily reflected in growth in the share of liquid assets in GDP'. Below is a description of the financial depth of Cameroon.

It is widely recognised that the financial sector in developing countries is shallow. This often is shown by a low rate of growth in some financial deepening indices as illustrated in Table 2.3 below.

Table 2.3. Financial Deepening index in Cameroon

Years	M2/GDP (%)	Banking (%) Claims/GDP	Percentage change in bank assets	Percentage change in bank liabilities
1980	23.5	29.5	28.8	23.7
1981	23.7	31.1	41.1	28.01
1982	23.3	31.2	17.5	23.6
1983	24.5	30.8	24.5	28.9
1984	24.2	25.2	7.5	24.1
1985	23.6	22.8	11.9	19
1986	21.04	23.8	3.13	-7.3
1987	17.7	25.3	5.7	-23.6
1988	19.2	23.8	4.2	8.5
1989	21.9	25.2	6.1	8.2
1990	22.6	26.7	-10.5	-0.15
1991	23.2	26.9	0.24	0.25
1992	18.9	12.6	-47.7	24.8
1993	17.2	11.6	-5.2	-4.7
1994	20.09	10.7	15.7	28
1995	15.7	8.9	-0.33	-17

Source: IMF Financial Statistics, various issues.

From table 2.3 above, one notes that the ratio of liquid assets to GDP (M2/GDP) falls in the bracket 0.15 - 0.30, indicating that the Cameroonian financial system is very shallow and is at an intermediate level. This may be because the banking network is not adequately represented throughout the country. Most banks are located only in towns and so saving potentials of the rural population which makes up a greater portion of the entire population, are not lured into the financial system. This goes to confirm what some authors assert, like Porter (1980), Lewis (1955) and Teriba (1981), that savings are 'institution elastic' and so in order to mobilise and increase savings, bank branches must be proliferated [Ogungbenro et al., 1996 op cit]. However, the relatively low levels of the financial deepening index (M2/GDP) provides an indication of the banking system's low ability to increase its lending for investment purposes. The high cash component of M2 indicates that the index may not reflect the development of long-term saving behaviour or a less preference for liquidity. As concerns the growth of the assets and liabilities of banks, reference is made to the deposit money banks.

On the basis of the above data, one observes that the ratio of broad money (M2) to GDP has been declining for Cameroon especially from 1986 to 1995 where it moved from 21.1% to 15.7%. However, some little expansion was noticed between 1988 and 1991. The data show also that the commercial

banking claims on the private sector for Cameroon fell from a high of 29.5% in 1980 to a low level of 8.9% in 1995, though a decreasing trend actually started in 1984. Thus, there have been no improvement in financial resource allocation following the financial reforms. The correlation between the financial deepening indexes and growth rates in Cameroon portray a meaningful relationship between credit availability and real GDP. The period 1980-1986 was characterised by positive growth rates and this is also marked by relatively high financial deepening index above 20%. Nevertheless, the low M2/GDP ratio in Cameroon may be a contributing factor to the financial and economic crisis the country in particular and Africa in general went through during the post 1986 period. The financial crisis had been characterised in the late 1980s by the following key effects; bank failures; banks insolvency; mismanagement; default payment; and high government deficits. This culminated in a series of closure of some counters of commercial banks and a full closure of others. This point is well analysed under the financial sector reforms in Cameroon at the close of this chapter.

As concerns the deposit liabilities and assets, negative changes occurred in some years. This is an indication of lack of confidence in the banking system, a feature which culminated in the closures of banks. Such periods are marked by low level of deposits in banks and thus low lending facilities. This period of

bank illiquidity places commercial banks at the disposal of the BEAC in request for refinancing. In this BEAC zone, the ceiling for total central bank credit is determined by the Board of Governors following proposals from the NCC. An observation of Table 2.3 indicates that the period between 1990 and 1995 was marked by declining M2/GDP ratio with negative bank assets and liabilities. However, in some years, positive changes occurred. The situation could be well observed when one examines the evolution of the liquidity positions of banks that create money, elaborated in Table 2.4. As observed in Table 2.4, the situation of the banking system continued to be characterised by the acute and persistent economic crisis which had been affecting Cameroon since 1985. It was therefore in a particularly difficult context that credit institutions in general and banks in particular continued to operate during the 1991 to 1994 period. Despite the reforms undertaken by the government in the banking sector, the expected results in terms of restoring liquidity, solvency and conditions for profitable exploitation did not occur except till the end of the second half of 1993/94 perhaps due to the CFA devaluation. This return of liquidity was marked by positive changes in cash in hand and at bank of issue and total deposits that ameliorated the ratio of deposit to credits rising from 69 to 110.61 percent between 1991 and 1994.

Table 2.4. Evolution of the liquidity position of banks that create money (in millions of CFA francs)

Item	June 1991	June 1992	June 1993	June 1994
1. Cash in hand and at the bank of issue	40 283	28 893	17 888	54 817
2. Foreign assets	47 223	43 640	24 769	65 961
3. Domestic credits	1 163 032	598 557	568 687	556 285
3a. including credits to the economy	1 052 324	499 136	453 968	377 271
Uses = resources	1 250 324	670 857	611 444	677 063
4. Total deposits	802 393	541 672	506 306	615 313
4. (a) incl. deposits by priv. persons and ent.	614 896	454 778	428 679	521 670
Ratio 1/4	5%	5.3%	3.5%	8.9%
Ratio 2/4	5.9%	8.1%	4.9%	10.72%
Ratio 4/3	69%	90.5%	89%	110.61%
5. Short, medium and long term liabilities	66 793	20.594	33 948	29 373
Ratio 5/3	5.7%	3.4%	6%	5.28%
BEAC assistance	81 602	45 056	50 791	26 445
Ratio 6/3	7%	7.5%	8.9%	4.75%
Ratio 6/3a	7.8%	9%	11.2%	7%
7. Consolidated credits on state	188 697	202 597	202 597	205 475
8. Equity	138 612	90 573	71 856	83 743
9. Other items	-27 559	27 038	-51 557	-77 811

Source: The National Credit Council of Cameroon, Twenty-second and Twenty third progress report of 1991/1992, 1992/1993 and 1993/1994 Financial years, p.43 and p. 43 respectively.

There was also a reduction in BEAC assistance observed in terms of a fall in the ratio of BEAC assistance to credits.

The return of liquidity considered as good banking performance, enabled some banks to reduce their commitments very drastically or increased their placements with their external correspondents. Others increased their investment account deposit despite the fall in the interest rates fixed by the bank of issue during the 1993/1994 financial year, whereas, others significantly cut down their request for central bank funding as long as they had not paid back their loans. Table 2.5 below shows these global trends in the main indicator of cash in hand at banks as of 30 June 1994.

Table 2.5: Some indicators of banking performance in millions of FCFA

Item	31-12-93	31-1-94	31-3-94	31-5-94	30-6-94
Net position of cash in hand	3 303	7 802	22 249	73 277	107 447
External position					
Investment account with	-4 541	-5 133	10 505	26 252	18 260
BEAC	1 490	2 300	5 250	16 955	34 100
BEAC refinancing	49 333	47 213	37 431	37 431	21 287

Source: National Credit Council of Cameroon: Report for the 1993/94 financial year, p. 42.

Thus, one can conclude that with the state now freely out of participation in financial institutions, the banking market has since been improving. However,

if the financial structure of banks are considered as opposed to their liquidity positions during the 1994/95 financial years, no improvement was registered, (The NCC, 1994/95 and 1995/96, p. 36). While some improvement in the financial structure was noticed by 30 June, 1995 with a deficit of 17 586 million francs as against 35 449 million in June 1994, it can be noted that it worsened further by 30 June, 1996 by recording a deficit of 49 673 million francs. There is also concern about the sector's lending facilities.

Credit to Government is strictly limited by Article 21 of BEAC statutes to 20 percent of the previous year's budget of the respective national governments. In practice, this is treated as an automatic entitlement. In the absence of specific co-ordination of fiscal and monetary policy, the credit limit to government may be insufficient to fund borrowing requirements particularly as sources of new foreign borrowing are extremely limited by debt repayment moratoria.

As concerns total lending to the Cameroonian economy, Table 2.6 shows its evolution from 1983 to 1991. It is noteworthy that most of the banking institutions are commercial banks. It can, therefore, be presumed that they make most contribution to the yearly lending. Most loans are characteristically short-term (71.6 to 88.5 percent). This represents three-quarters of the entire loan and this trend was maintained right up to 1996 as observed in Table 2.7 also displayed below.

Table 2.6: Lending to the Cameroonian Economy from 1983 to 1991 (percentages)

Year	Banking institution	BEAC refinancing	Total	Short Term	Medium Term	Long Term
1983	83.3	16.7	100	72.4	26.2	1.4
1984	83.6	16.4	100	71.5	27.2	1.2
1985	87.1	12.9	100	74.6	24.3	0.4
1986	83.7	13.6	100	75	24.6	0.4
1987	74.8	25.2	100	77	22.6	0.4
1988	75.7	24.3	100	81.3	18.3	0.4
1989	78.6	21.4	100	86.7	13.2	0.1
1990	79.8	20.2	100	88.5	11.5	-
1991	80	20	100	87.1	12.1	0.8

Source: BEAC, Statistiques Economiques, 190, Mars 1992, p. 153.

Table 2.7: Evolution of credit stock of commercial banks

Years June	Short Term (%)	Medium Term (%)	Long Term (%)	Total %	Amount (Millions of FCFA)
1991	83	16.9	0.1	100	571 694 (1)
1992	78.2	20	1.8	100	499 136
1993	81	18.7	0.3	100	453 968
1994	80.4	19.4	0.2	100	377 271
1995	83.8	15.9	0.3	100	397 411
1996	82.6	16.8	0.6	100	423 963

Source: Calculated and adopted from various issues of "Statistiques Financiers et Rapport d'Activité" - BEAC 1993/94, 1994/95 and 1995/96 Financial years.

(1) The difference between the amount of credits to the economy in 1991 observed in Table 2.4 and in Table 2.7 is that, the situation in Table 2.7 did not take into account the claims of liquidated banks. Thus, only unquestionable credits are considered here.

The evolution of credits to the economy offered by banks that create money could be linked to that of deposits. Table 2.4 above shows that credit to the private sector continued to diminish with deposit between 1991 and 1994. This is not different from what we observed in the ratio of Banking claims to GDP. But with the upswing of deposit as in June 1994, total credits to the private sector or economy reversed its trend to an upward direction as from June 1995. Table 2.7 also shows how credit to the economy began to rise in that year. This positive trends may be due to the return of capital placed abroad, and the foreign exchange gains realised by businessmen, aggravated by the CFA devaluation.

2.3.2 The Structures and Performance of the Semi-formal Financial System

2.3.2.1 Introduction

The non-formal financial sector in Cameroon like those in many other African countries, consists of several heterogeneous activities and organisations. Nissanke (1991) and Soyibo (1994a), in their recent study provided an in-depth description of these organisations and activities. They include three main types of structures as outlined below.

(i) The semi-formal institutions such as savings and co-operatives, credit unions and programmes managed by some self-help NGOs.

(ii) The less formalised, smaller scale arrangement such as savings groups, mutual aid associations, non-rotating saving and credit association, rotating saving and credit association.

(iii) Commercial lenders such as estate-owners, landlords, traders, shopkeepers and professional and non-professional money-lenders, friends, relatives and business associates between whom transactions take place on a non-commercial basis.

The emergence and development of these different structures derived from the inability of the formal banking system to meet participant's needs, precisely the incapacity of the formal sector to mobilise rural savings, savings of small traders, handicraftsmen and households with low income levels. All these have prompted the growth of this sector of the financial market.

Indeed, savings comprise a behavioural and social dimension which should be taken into account in the organisation of a broader financial market that could reach the majority of the population especially those in rural areas. That notwithstanding, it would appear a greater percentage of the population still express fear and lack of confidence in the banking system. They tend to place more confidence on the informal sector. This corresponds to the mentality

households have as concerns guarantee against defaults of payments of their deposits and the intimacy that characterises the sector. These to some extent are the general conditions leading to the evolution of semi-formal institutions. The types of units and institutions existing in Cameroon and which fall under semi-formal financial units could be linked to credit unions and 'Co-operative d'Epargne et de Crédit' which came up following the decree n° 92/006 of August 14 1992 relative to the creation and organisation of co-operatives and common initiative groups . However, in this study, the case of credit unions as an example of a semi-formal unit is considered. The nature, scope and growth of the Co-operative Credit Union network is described below.

2.3.2.2 The Nature, Scope and Growth of the Co-operative Credit Union Network

One of the earliest, fastest growing and acceptable semi-formal financial institution in Cameroon is the Credit union network when measured in terms of its nation-wide network system, high savings mobilisation capacity, large and rapidly increasing number of memberships and volume of loans granted to its members (Tawa, 1993). These performances can be observed in Tables 2.8 and 2.9 below. The first Credit union (CU) in Cameroon was set up in 1963 in Njinikom of the Northwest Province and modelled on the British system. The growth of the CU movement led to the founding of Cameroon Co-operative

Credit Union League Limited (CAMCCUL) in 1968 with headquarters in Bamenda. At the start, the league had 34 registered `primary co-operatives' and by the end of 1983, CAMCCUL had 112 member co-operative unions with a total of 50,042 members as well as 108 `discussion groups' (pre-co-operatives) with 47,888 members. The total assets of the league at the end of 1983 amounted to 1,245 million CFA francs, including 1,010 million CFA francs in long term deposits of the members.

The credit union still popular in the English-speaking region of Cameroon, has gained considerable grounds in the French-speaking region also. Table 2.8 shows their distribution as of July 1987. Five out of the ten provinces in the country have credit unions and pre-co-operative credit unions, and an additional two operate discussion groups. In all, there were 122 credit unions and 160 pre-co-operative credit unions in 1987. It is however, possible that since 1987 these numbers have risen.

Table 2.8: The Distribution of Co-operative Credit Unions and Pre-co-operative Credit Unions by Province, July 1987

Province	Co-operative credit union (number)	Pre-co-operative credit union (number)	Total
Central	15	48	63
Littoral	6	16	22
Extreme North	-	1	1
North West	61	44	105
West	1	16	17
South	-	1	1
South West	39	34	73
Total	**122**	**160**	**282**

Source: The promotion of small and medium scale industries in Cameroon, Regina Tawa (1993)

Membership in these credit unions and discussion groups is correspondingly high (see Table 2.9). From 4,000 in 1968, the membership stood at 72,358 in 1989 (an overall increase of 1709 percent, within an average annual increase of about 90 percent). The rapid growth of the credit union movement as already mentioned, necessitated the creation of an apex organ-CAMCCUL which unites all credit unions at the national level, while the individual credit unions remain organised at the village level. However, a number of them form chapters at the divisional level. Discussion groups are still organised at the village level. They serve primarily to prepare members for full participation in credit union activities. Before creating a credit union, its members meet weekly in a discussion group for about six months. During this period, the working pattern of the credit union is introduced and questions are discussed.

The sessions continue for sometime, even after the discussion group is converted to a credit union. This procedure is said to be one of the reasons for the success of credit unions in Cameroon.[8]

Table 2.9: Evolution of credit union membership, savings and loans in Cameroon, 1968 to 1989

	Membership		Savings		Loans		
Years	Number	Annual Growth Rate (%)	Amount in Million FCFA	Annual Growth Rate (%)	Amount in Million FCFA	Annual Growth Rate (%)	Loan-savings Growth Rate %
1968	4 000		16		10		62.5
1984	530 126	81.7(1)	5 328	20.75(1)	3 677	22.91(1)	69
1985	58 604	10.5	6 494	21.9	4 584	24.7	70.6
1986	60 512	3.3	7 834	20.6	5 712	24.6	72.9
1987	66 443	9.8	8 891	13.3	6 341	11	71.3
1988	68 980	3.8	9 653	8.6	7 500	18.3	77.7
1989	72 358	3.9	10 600	9.8	6 800	-9.3	64.2

Source: The promotion of small and medium scale industries in Cameroon, Regina Tawa, (1993, 158).

(1) Figures show the average annual growth rate.

Credit union membership, as indicated above, is large and widespread. Savings and lending activities are presented also in Table 2.9. The average growth rates, especially up to 1984 were very tremendous. While these activities continued to grow for the rest of the 1980s', the rate was much lower, possibly reflecting a reduced trend in the growth rate of membership, which was as low as 3.8 percent in 1988. The Loan-saving ratio rose continuously and reached a peak of 77.7 percent in 1988. This dropped by over 10 percent to 64.2 percent in

[8] *Regina Tawa (1993) op. cit.*

1989, possibly due to cautious attitudes in the deepening economic crisis in Cameroon. Inspite of this, the credit unions are performing well, especially when consideration is given to the difficulties faced by the formal financial or banking sector. The success of the credit unions as at 1989 in terms of its proliferation, rising savings and loans is attributable to the role of CAMCCUL, the apex organ. A deposit growth rate of 20 percent per year is estimated for CAMCCUL[9].

At the level of administration and organisation an assembly of Delegates of registered credit unions represents the supreme decision-making organ of CAMCCUL. The next level is the Board of Directors to whom the manager is answerable. CAMCCUL has a number of Departments such as Finance, Education and Training, Supervision and Audit, Risk Management, and Credit. Therefore, it has promotional supervisory and educational roles which it exercises through its field staff who audit the books and records of the various credit unions. The repayment ratios are considered good. For instance, as Tawa (1993) acknowledged up to 1971, all loans granted for a maximum duration of one year at 1 percent per month were paid. The Azire Co-operative Credit Union of Bamenda was able to recover 565 delinquent loans amounting to 25.5 million in 1983.[10] However, the services of the police and retainer lawyers were used to do

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[9] *Reinhard H. Schmidt (1985) op cit p. 38.*
[10] *Regina Tawa op cit.*

so in some cases. Reinhard (1985) mentioned that in that same year (i.e. 1983), the league was able to recover 97.4 percent of its cost.

CAMCCUL also acts as a central financing agency for member unions. According to their by-laws, all credit unions are required to transfer 25 percent of their deposits to the League in an account called the League Fixed Deposit Account, on which they receive a 6 percent deposit rate. In case they have a liquidity shortage they can borrow the fund back from the league at 9 percent lending rate. Credit unions used to charged 1 percent on loans per month but this had since been raised to 1.5% which accumulates to 18% per annum, though a few unions still apply the 1% rate. The League itself keeps the 25 percent minimum reserves it has received from the credit unions in banks. This link between the credit unions and the formal banking sector constitutes the peculiarity of the Cameroon financial system. Furthermore, it is obvious that many of the members of tontines[11] and other informal financial units have accounts or deposits in the modern banking system.[12] Thus, in Cameroon the direct links between the two sectors are confined to the use of deposit facilities of formal institutions by informal units for short-term safe-keeping. The semi-formal system too, could be considered as a bridge to the formal financial system

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[11] *The definition of tontine is found in section 2.3.3 below.*

[12] *There is a permanent link between CCEI and rural savings and credit associations through a product called the MC2. The MC2 is Community Mutual Benefit Society for Growth, a rural savings and loans unit operating with the support of Caisse Commune d'Epargne et d'Investissement (CCEI). It helps the former through refinancing and deposit facility schemes.*

assuming the case of credit unions. And as such, much lessons could be learnt therefrom, for the mobilisation of domestic resources or development. This fact is in line with the findings of Nissanke (1994), which says that a direct and indirect link exist between the formal and informal financial units. Accordingly, two direct links exist - Deposit and Credit links.

The CAMCCUL's deposits to the banking sector represents a direct deposit link. Deposit facilities of the formal institutions by semi-formal units such as credit unions and others enable the latter in general to reduce the idle cash balance and provide at the same time formal banks with greater liability base of loanable funds for credit expansion. Therefore, it also allows the semi-formal units to have interest-bearing assets. In sum, one would say the informal links between these financial units could make it possible for the informal finance to be 'regulated' in order to foster the global mobilisation and allocation of credits in Cameroon.

As concerns the operation of credit unions in particular and semi-formal institutions in general, they are out of the reach of monetary authorities. However, the rules applicable by the government as well as their own by-laws enable the safety of members' deposits. The analysis that follows concerning the facility provided by CAMCCUL will explain how protective CAMCCUL is. Since 1980, for instance, loans granted to the credit unions and their co-operatives

represent only 2 percent of their deposits in the League.[13] The little use made of the fixed deposit account by the unions may be because most of the credit unions have enough savings to cover their loan demand, which partly have been kept high by a low-cost insurance scheme, namely the Risk Management Scheme, which is operated by CAMCCUL. The lending attitude of the credit unions is also very cautious.

The Risk Management Scheme has been in operation since 1976. It is underwritten by the 'African Co-operative Savings and Credit Association (ACOSCA). Under this scheme, the league provides three types of insurance, namely:

- Life Insurance, which provides financial security to members of the credit union and their heirs. To the members this involves a minimum monthly premium of 65 Franc CFA for every 100,000 FCFA savings.
- Loan Protection Insurance, which is given to credit unions to cover their members' loan. The insured amount is equal to the outstanding loan balance at the end of each month. The monthly premium is also 65 FCFA for every 100,000 FCFA outstanding in loans, and lastly,

[13] *Regina Tawa op cit.*

- Fidelity Bonding, covers losses caused through fraud or dishonesty of employees, theft, property and equipment loss or fire, flood, lightening, etc.

In the first two types, members (or their heirs) can secure additional amounts on their savings upon their death or permanent incapacity. The last type of insurance on the other hand, helps to create confidence in members that their savings are secured from a number of risks.

At least, a semi-formal financial unit has been examined in terms of organisation and performance. This is assumed to represent the entire performance of the semi-formal financial sector. As illustrated in the operations of the semi-formal sector, the Cameroonian economy can generate enough financial resources which should be mobilised and injected into the financial system. These savings are held by households and by the unions organs responsible for collecting the resources, such as some of the non-bank financial institutions, insurance companies and the welfare institutions such as the insurance companies. Mobilisation of these resources will depend on two indissociable factors: the confidence of households in the savings-collection structures, and the overall economic environment which, if not improved, will be a virtually insurmountable obstacle to the emergence of a real financial market. The adoption of simple, clear and safe rules will contribute to portraying savings,

particularly its mobilisation, as a result of arbitration rather as the passive unspent fraction of available revenue, in the Keynesian sense of the term. In addition to the semi-formal institutions, some other informal sectors prevail in Cameroon. This constitutes our discussion in the following section.

2.3.3 Structure and Performance of the Informal Financial System

Despite the strong presence of modern financial institutions, it is noted that the collection and distribution of savings are not well represented since most of the banks and other credit institutions are not evenly spread over the national territory.[14] Furthermore, observing the distribution of co-operative credit unions and pre-co-operatives by province in Table 2.8, one notes that only northwest and the Southwest provinces have more than 30 credit unions each. The others have few or none. However, globally speaking, from these data it can be concluded that both the formal and semi-formal financial units do not effectively mobilise savings in the economy in Cameroon. This situation has resulted to the offspring of an informal sector which is assumed neglected by the formal financial system. Thus, the former orientates its actions where the latter is more or less failing. The structure of the former is of particular interest to us in this

[14] *The network of credit institution as of June 1993 spread over 190 branches and offices which 40 to 53 were in Yaounde and Douala respectively. (Twenty-second Progress Report of NCC' op cit p. 40)*

section. It is made up of a whole range of informal groups whose main activities are the collection of funds and/or the distribution of the funds to the members or third parties.

Many studies have been conducted on this widespread form of financing in the third world, and it is very difficult to determine a somewhat common stratification for it. If Holst (1985) classifies these financial institutions into five categories, Lelart (1989) and Adbalmi (1989) only retain three forms. The most common form recognised by almost all the authors is the rotating savings and credit associations (ROSCAs) which collect the contributions of members regularly (monthly, fortnightly or weekly), distribute them to the same members by drawing lots or by order of urgency.

In Cameroon, `Tontine' or `Njangi' is used to describe such forms of credit associations. Nzemen (1993) adopted a division into five groups. But for the adopted structuring, Nzemen like_Tchatchouang (1991) and Tchuente (1991) think that one can make 2 big groupings: `People's savings and/or credit banks' that can function by charging or not charging interest rates and then `Economic or business tontines' which are the most numerous here, generally bringing together private economic operators. The functional mechanism of a tontine is based on the following basic pattern:

> A group of, for example 12 persons who know each other well, come together and form an association. They meet at precisely defined intervals of time, for

> example at the beginning of each month. At this meeting, every member pays a fixed amount (the `cotisation' or contribution), e.g. 2000 FCFA into a mutual `pot'. This is then paid out to one member of the tontine according to a previously established system. In the course of a cycle every member receives the `pot' once according to his turn.

The tontine can be described as a self-help group. As Tawa (1993) acknowledged, about 50 percent of Cameroon's adult population is reported to be organised in financial self-help groups. The sums of money involved are becoming larger. For instance as far back as 1973, a ground of 12 members in Douala was reported to be contributing one million CFA Franc. The significance of the self-help groups in Cameroon has been further estimated in terms of lending and savings activities. Schrieder and Cuevas (1989) projected the importance of informal borrowing and savings at the national level and arrived at the conclusion that indigenous financial groups provide 27 percent of all loan requirements and 54 percent of total financial deposits.

Concerning those Njangis/Tontines that charge interest rates, Tawa (1993) presents the following results of a survey carried out in Cameroon in 1991. After contributions were made in a njangi and given to one member, further contributions were paid into a special fund by 46 percent of the group surveyed. These contributions were used specifically for lending to members. Meanwhile, most others made additional contribution for entertainment. The rotating element

in some njangis enables interest to accrue like in the auction system. A case was reported in a 24 member njangi, where in 1986 one of the members made a record bid of 5 million CFA Francs for a total contribution of 12 million franc.[15] This roughly meant an `interest' of about 42 percent in one month. The special funds do also earn some interest and the amount depends on how much borrowing is done within a given period or if the fund is deposited at a bank depending also on the interest rate paid by the latter.

Thus, after having examined to some extent the level of mobilisation and distribution of funds in the informal financial system, one notes that the sector constitutes an important source of finance for development. For instance, as mentioned, 27 percent of loan and 54 percent of deposits requirements are provided respectively by the sector. However, in Cameroon many other informal financial units exist such as tribal associations and other relations among friends and neighbours or self-help groups. We have also discussed the performances of the formal and semi-formal units that operate within the scope of legal rules. In Cameroon, just like in other developing countries, the ensemble of financial circuits is composed of the formal and informal sectors. Each of these two sectors in general, is quite diverse with regard to the institutions, market mechanisms and operators involved. The financial sector of Cameroon was considered to be in

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[15] *Regina Tawa op. cit..*

crisis as in many other developing countries, and no longer operates a sound and efficient payment system, nor does it maintain safe and sound banking operations as shall be observed later. Today's strategy of gradually removing financial repression, dismantling directed credit programs, introducing better accounting, legal and supervisory frameworks, continuing with institution building, and deepening and developing capital and money markets is clearly headed in the right direction.[16] Cameroon, as well as other franc zone member states have not been left behind. They have also been implementing some reforms in their financial systems.

2.4 FINANCIAL SECTOR REFORMS IN CAMEROON

In many developing countries, financial sector reforms have been pursued over the past two decades as part of structural reforms programs aimed at promoting growth and financial stability.[17] Reforms of financial systems in Cameroon and most countries of the CFA zone generally started much later than countries of Asia, Latin America and other African countries. It was just almost a decade ago that Cameroon mounted its own reform under the structural adjustment programme together with other BEAC members states.

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[16] *World Bank (1994): Adjustment in Africa, p. 240.*

[17] *Finance and Development / September 1997, Quarterly Publication of the IMF and World Bank.*

During the 1970s and the 1980s, Cameroon pursued inward-looking development strategies with the state playing a prominent role. The financial sector was heavily controlled; interest rates even though still administratively set, were not subject to frequent adjustments, and usually negative in real terms; commercial banks were often obliged to lend to priority sectors; and money markets were yet underdeveloped. The inefficiencies and distortions of this system became apparent and were exacerbated by the emergence of severe economic crisis in the mid 1980s. However, the difficulties experienced by the sector were also due to poor management and of state intervention. Accordingly, the major actors of the sector which were commercial banks, became insolvent. Infact, the insolvency situation of these banks appears to be the conclusion of a long structural process that was only waiting for the right conditions to manifest itself; thus, a report of the World Bank issued in 1981 (quoted in Jeune Afrique Economique of August 1989) announced a structural crisis of the banking system in some sub-Saharan countries because of state ascendancy.

In order to tackle these mounting financial difficulties and enhance growth prospects, the government embarked on comprehensive stabilisation and structural reform programs that were and are being supported by the IMF and the World Bank. Financial sector reforms became an important element of these programme, aimed at making the sector healthy so as to maintain confidence in

the banking system. The programme which may be basic or comprehensive typically comprises the following elements:

- Rehabilitation of banks and insurance companies through financial and organisational measures. This tends to be a painful and lengthy process, as it requires that hidden portfolio problems be brought out into the open, that inefficient personnel be dismissed and entire banks or bank branches be closed, etc.

- Deregulation and liberalisation applying to the interest rates which a financial institution can pay and charge, no selection of sectors which lending is permitted, and many other aspects of banking operation.

- Creating or strengthening bank supervisory institutions.

- Limitation and even reduction of the discretionary powers of the government deriving its from many roles as owner, regulator and major borrower-customer of the banking system and

- Instituting competition in the banking sector.

It is our believe that, if much of these measures are implemented together with the government reinforcing the supply side of the economy and with the support of other structural reforms, such as trade liberalisation, reform of the incentive system, and eventually privatisation, then the role of the market forces in the allocation of financial resources and the capacity of financial institutions to

mobilise savings will improve. Thus, the financial sector reform cannot be undertaken without other reforms such as monetary and fiscal reforms that will create some stability in the economy.[18]

2.4.1 Nature of the Financial Sector Reforms

In Cameroon, the initial step of the financial reforms concentrated on the banking system, even though other measures such as reconstitution of budgetary savings, restructuring the production system, particularly public enterprises, and re-establishing external financial balance through more appropriate trade and debt policies are also implement.[19] The other measures are expected to eliminate macro economic imbalances in order to pave a smooth environment for a successful financial reform. This will mean a manageable balance of payments and fiscal deficits with relatively low inflation rate.

However, a lot has changed in the banking sector of Cameroon since the onset of the economic crisis in 1986. As a result and by mid-1987, a majority of the commercial banks were technically insolvent and, in 1989 according to World Bank estimates, the aggregate deficit in the banking sector was about 300 to 375

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[18] *Dornbusch and Reynoso (1989) argues that without financial stability, liberalisation may be quite dangerous. Mckinnon (1991) also, considers that the most important task of stabilisation in preparing the scenario for successful liberalisation is that of eliminating the uncertainties referring to future price level, interest rates and exchange rates. Appropriate macro-economic policy, institutional development, and structural reform then, must accompany financial liberalisation and create the stable context required for it to succeed.*

[19] *See the Report of the NCC, 1987/88, 1988/89 and 1989/90 financial years, p. 104.*

billion CFA francs.[20] It is therefore not surprising that under the structural adjustment programme the financial sector has been put at the forefront. Many banks were liquidated and or acquired in 1989 and between this year and 1991, some restructuring further took place involving a public financial institution - the Fond National de Developpement Rurale (FONADER). The Banque Internationale pour l'Afrique Occidentale (BIAO), was taken over by Meridien Bank thereby changing its identity to Bank Meridien-BIAO (BMBC). However, the latter was also affected by the economic crisis. The list of banks under liquidation are presented in Table 2.1 above.

It would have been an exercise in futility if insolvent banks are sold off without the possibility of recovering the bad debts or loans not reimbursed. In this perspective, a loan recovery company or Société de Recouvrement des Créances (SRC) was set up in August 1989 to administer the liquidation-restructuring process. However, in some cases accredited liquidators are created to monitor the process. This was the case with the First Investment Bank (FIB). The activity of SRC in Cameroon during the periods mentioned above is described in Table 2.10 below.

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[20] *Economic Intelligence Unit, Cameroon Country Profile 1989 - 1990, p. 30, see also Table 2.10 of this study.*

Table 2.10: Restructuring monitored by SRC in Cameroon.

Banks	Nature of operation	Dates	Total Balance Sheet (billions CFAF)
SCB	Acquisition/Liquidation	4 Aug. 1989	164.0
BCD	Liquidation	25 Aug. 1989	31.0
Paribas Cameroon	Liquidation	25 Aug. 1989	40.3
BCCC	Acquisition/Liquidation	4 Sept. 1989	18.0
FONADER	Liquidation	10 Aug. 1990	16.4
Insolvent Component of BICIC and SGBC			76.9

Source: Impact of the Banking sector reforms in Francophone Africa, Njinkeu (1997 Table 1, p. 126).

To ensure transparency of the financial system and to avoid management short comings, strengthen control and regulation, (COBAC) was created in October 1990. Following the harmonisation of banking activities within the BEAC zone in 1992, COBAC as the regional supervising organ, organises the inspection of various banks and other financial establishments and determines all conditions necessary for liquidation if possible, in order to ensure a strict adherence to the measures taken by the Ministers of Finance of the zone. In case of non-respect of banking legislation, the organ may withdraw the approval of a credit institution.

As concerns the interest rate policy, it has become very flexible following a decision of the Board of Governors of BEAC in October 1990. A single discount rate for the Central Bank (advances to banks and to treasuries) and the elimination of preferential interest rate have been enforced. This was aimed at raising administered interest rates to positive real levels and also as an important

step in the reform process. As concerns liberalisation of banking conditions, this was reflected in the repeal of minimum lending rates, the fixing, as from 17 October 1990, of a minimum credit rate. These moves implied reduced reliance on financial repression to finance government deficits since neither the former nor banks could now borrow at different rates from the Central Bank. Thus, the institution of a maximum lending rate and a minimum deposit rate are observed as liberalisation of the interest rate policy, although limited control on saving account remained in force.

The creation of a money market in the BEAC zone was definitively approved on 29 November 1993 and went operational as from July 1994. This, it is hoped with the phasing out of direct and discretionary forms of credit control, will enable the monetary authorities to manage liquidity through a more market-based allocation of refinancing. However, the main desire of putting in place a money market is to hold in the zone of issue liquid assets which are created in the zone and or repatriated to it liquid assets that would be placed abroad, while at the same time improving the central bank's ability to implement its monetary policy and control the distribution of credit.[21] Furthermore, because of the crisis, the objective was also to rationalize, through the central bank, money creation by placing more emphasis on the recycling of surplus bank resources. Following the

[21] *See the Twentieth-first Report of the NCC, p. 27.*

difficulties that prevailed in the financial system, the instability of resources did not augur well for inter-bank loans. Thus, the project of a money market provided that initially, banking transactions on this market will have to be in the form of advances or deposits at BEAC. Subsequently, with the installation of confidence, the creation of a real inter bank market could be envisaged. A zone of Issue refinancing section was also planned as part of the money market. Initially, the exchange of liquidities was between each country but could later be extended to the zone of issue.

In addition to the creation of money market, other reforms include monetary programming (see section 2.2.4), and improved prudential regulations. Prudential regulations concerns the liquidity ratio, rules of solvency, cover ratio of risk and ratio of division of risks. This new mechanism was set up in July 1993 by COBAC and follows the following guidelines: Liquidity ratio now have a ceiling for one month as against 3 months and will incorporate all items having an impact on liquidity; risks coverage will incorporate below the line commitments and, on the other hand will also include a weighting of risks in terms of real guarantees, 5% of credits in equity capital; Division of risks is now extended to all the states of the zone and will take into account local peculiarities, in particular the financing of crop credits; Cover ratio fixed assets of 50% has been replaced by a long term transformation ratio.

However, the situation of the banking system continued to be characterised by the acute and persistent economic crisis which had been affecting Cameroon since 1985. Thus, credit institutions in general and banks in particular continued to operate in a difficult context during the 1993/94 financial year. Accordingly, a continuation of the organisation and restructuring of the banking system was followed by the government.[22] The government then adopted another plan which was aimed at the individual restructuring of such banks and the liquidation of the bad cases, and also improving the legal, fiscal and regulatory framework within which credit institutions operate and a strengthening of the control and supervision of the banking sector. Nevertheless, by the end of the second half of 1993/94, the positive effects of the change in parity of the CFA franc vis-à-vis the French franc led to a progressive re-establishment of the liquidity of banks. Thus, the issue of exchange rate policy to a minimum could be considered as part of a comprehensive financial reform package implemented by the CFA member states as a whole. However, as concerns the issue of banking reforms, between the period 1993 and June 1997,

[22] *It should be noted that the sharp fall in public and private deposits caused by the drastic fall in commodity prices, the inefficiency of the control mechanism, interference by public authorities, delays in credit recovery procedures by way of the courts and serious internal management problems may have been responsible for the crisis which led to the government adopting another plan.*

most other banks have had to be either restructured or liquidated due to financial difficulties as a continuation of the ongoing reforms[23] .

In 1994/95, of the eight commercial banks that existed in Cameroon, only 3 presented convincing balance sheets among which were SCB-Credit Lyonnais, Amity bank and CCEI-bank. However SCB, liquidated in 1989 as already mentioned was taken over by credit Lyonnais of France. The five others because of liquidity and profitability problems, aggravated also by existing bad debts were restructured in terms of recapitalisation. Nevertheless, some others which were Bank Meridien BIAO and Credit Agricole were completely shut down. Whereas, SGBC and Standard Chartered bank with the efforts of the government and the parent banks were recapitalised, BICIC due to the withdrawal of the parent shareholder- Banque Nationale de Paris, was restructured and its identity changed to BICEC.

For the insurance sector, a new legislation has been put in place which shall help improve the conflict resolution procedures and to supervise insurance companies within the African region including Cameroon. The government has assured the stringent respect of the provisions of the treaty instituting the Inter-African common insurance market. Within this framework there was a

[23] *See Echos de Presse, no. 96 - 012 of December 1996, pages 3, 4, 9 and 10. See also Finance-infos: May 1997.*

withdrawal of the approval of 'Assurances Mutuelles Agricoles du Cameroun' [AMACAM], while for those of "Société Camerounaise d'Assurances Reunies" (SOCAR) and "Compangnie Nationale d'Assurance" (CNA), two public insurance companies, studies are underway for their ultimate restructuring and privatisation (Finance-Infos, 1997).

Measures to increase competition among banks included the opening of some banks' Capital to private participation (domestic and foreign), the granting of greater autonomy in lending decisions following the fixation of maximum lending rates and the elimination of statutory requirement for government participation in commercial banks. However, one is forced to conclude that the reform process has been relatively gradual and it is still continuing. Accordingly, increases in administered interest rates, followed by greater flexibility in interest rates, were undertaken in parallel with strengthening the financial situation of banks (through restructuring and recapitalisation) and implementing enhanced prudential regulations and bank supervision. This might have provided the monetary authorities with greater room for manoeuvre in phasing in other changes without losing control of the reform process.

However, further reforms are still to come as reflection are underway in view of creating a financial market (Stock Exchange).[24] According to the

[24] *See Finance-infos May 1997.*

Nation's Daily, Cameroon Tribune, Deposits Guarantee Fund would soon be created; besides, studies for the creation of an Inter-bank Guarantee Fund for the promotion of medium term credits is also underway.[25] Lastly, the restructuring of co-operative and saving schemes in the country will soon be undertaken and it is believed in decision making circles that a good re-organisation of the scheme will possibly finance the rural world and even assist minor urban projects with more consistency. Another important reform also considered as a move to popularise the use of banking services by getting most financial transactions done through the banks, is the use of crossed cheques. It is now a statutory regulation that individuals cannot be paid cheques not belonging to them on the counter except crossed and deposited in their accounts. This went operational in January 1, 1997.

Finally, concerning the other measures already in place, one could say that the pace of changes in the financial sector with other macroeconomic reforms have not been very encouraging. The setbacks in fiscal consolidation due to the drastic fall in commodity prices, the inefficiency in the control mechanism and delays in credit recovery procedures by way of courts may tend to have prolonged the financial sector reform process in the area of bank restructuring and liquidation (Report of the NCC, 1993/94, p. 41). This, therefore may be the

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[25] *Ibid.*

reasons for the reforms not to have shown some positive signs as expressed below.

2.4.2 Effectiveness of Reforms

One of the central objectives of financial reform is to promote financial deepening and thus, savings, investment and growth (Montiel, 1995; Oshikoya, 1992). The adjustment of interest rates to reflect some flexibility and the cleaning of balance sheets of banks were expected to have placed various economic variables back on their rails, restore confidence to depositors and as such stimulate savings and investment, while improved allocation of resources was to come from efficiency gains in financial intermediation. Of course, savings, investment and growth depend too on some non financial factors such as structural reforms and external shocks. As Njuguna (1997) puts it, `shocks and constraints limit the success of adjustment in some countries; and fiscal adjustment is being hampered by debt overhang and terms-of-trade shocks'. However, another possible reason in the case of Cameroon may be that it is still very early to appraise the success of the reform. Nevertheless, measuring the results of reform is extremely important if policy is to be well designed for future prospects.

As expected, or contrary to expectations, after the rationalisation of interest rates the formal financial sector appears to have contracted as no positive impact has been felt on financial intermediation. According to Table 2.11, growth rate of money supply, M2, which averaged 16 percent during the pre-reform period decelerated to -3.3 percent in the reform period. Furthermore, a reduction in the magnetisation and the volume of intermediation have been manifested by a decreasing ratio of the money supply (M2) to GDP; and a fall in credit to the private sector which is indicative of yet an improved allocation of financial resources. However, the real interest rates became positive but did not affect the efficiency of financial intermediation as reflected in the constancy of the deposit to GDP ratio which averaged about 15 percent throughout the different periods. This implies that there is uncertainty as concerns an ultimate improvement in the banking performance. One may be forced to conclude that with the state now safely out of participation in the financial institutions, the banking sector is yet to improve. This will depend too on a variety of factors which may have contributed to the reduction in the depth of the formal financial sector during the reform.

Table 2.11: Indicators of financial sector reform and macroeconomic performances (percent)

Indicators	Performance		
	Pre-reform 1972 - 1989	Reform 1990 - 1996	Overall 1972 - 1996
M2/GDP	21.3	18.6	20.5
Money growth rate	16	- 3.3	10.6
Credit to the private sector/GDP	24.8	12.1	21.2
Deposit/GDP	15.4	15.3	15.4
Reserve money/Deposits	41.7	31.6	38.9
Bank reserves/Deposits	4.6	5.8	4.8
Reserve money/M2	28.9	25.8	28
Inflation rate	9.8	7.6	9.3
Real interest rate on postal savings	- 3.1	1.1	- 1.9
Real interest rate[1]	- 1.1	1.2	- 0.15
Real lending rate[2]	4	15	8.2
Central bank discount rate	6.9	10.2	7.8
Private investment/GDP	16	12	14.9
Incremental capital-output ratios[3] (ICOR)	2.5	2.9	2.60
Government deficits(-), surplus(+)/GDP	0.6	-4.1	-0.6
Domestic savings/GDP	21.5	18.6	20.7
Terms of trade (1985=100)	239.4	115.6	204.7
Debt Service-Export ratio	14.6	18.7	15.5
Openness of the economy	35.6	27.1	33.3
Real exchange rate (1994=100)	16.9	63.6	30
Real growth rate	4.7	0.45	3.5

Source: Various issues of IMF International Financial Statistics; World Bank World Tables, World Debt Tables; BEAC's Etude Statistiques et Economiques; notes annuelles des statistiques and Post Office Saving Bank-Yaounde.

Note to Table 2.11

1. Deposit rate on savings deposits of Commercial Banks, were averaged between 1979 and 1996 due to the non-availability of data.

2. Real lending rates of banks were averaged between 1979 and 1996.

3. Incremental capital-output ratio, (ICOR), expressed in proportion.

For instance, capital flight associated with macroeconomic uncertainty; severe economic crisis manifested in greater internal and external imbalances, external debt burden, real appreciation of the exchange rate, and slow growth rate (GDP growth rate fell from 4.7 percent in the pre-reform period to 0.45 percent in the reform period), are macroeconomic turbulences which if still persistence will always inhibit the mechanisms described in the liberalisation literature from taking hold in Cameroon. Furthermore, the reform period was also characterised by severe government deficits averaging 4.6 percent per annum. This also may have distorted the mechanism of financial liberalisation by negatively affecting growth. This fact conforms to Fry et al., (1996) negative relationship that exist between growth and government deficits. Thus, the objective of fiscal adjustment is yet to bear fruits and so is still a hindrance to financial development and growth.

At the macroeconomic level, Table 2.11 again does not support the view that domestic savings rate rises in response to interest rate liberalisation. Infact, gross domestic savings rate dropped to 18.6 percent during the reform period, although real deposit rate increased from an average of -1.1 percent during the 70s and 80s to 1.2 percent during 1990-1996. Further, private investment actually fell during the reform period and this might have had a negative impact on the growth rate. The ratio of private investment fell from 16 percent to 12 percent. The decline in private investment rate seems to reflect the increased macroeconomic uncertainties and instability associated with deteriorating terms of trade, increased external resource transfers from the country, a fall in openness of the economy, all of which can be subsumed in terms of an appreciation of the exchange rates and the fear of lack of sustainability of policy reforms. The increase in the price of capital or real lending rate may also have got a negative impact on investment in the liberalisation period as it moved to 15 percent from 4 percent in the pre-reform period.

As concerns real growth rate, the low positive rate may be due to the remarkable fall in private investment as well as to the slight increase in the incremental capital-output ratio leading to a drop in the efficiency of investment. Thus, much benefits of the financial liberalisation attempts introduced recently in Cameroon in particular and the BEAC zone in general are yet to accrue. The

environment in Africa as a whole is far less favourable - considerable macroeconomic imbalances persist and institutional development is not well developed.[26] However, in Cameroon, with the improvement in public finances that have been reducing budget deficits, coupled with a positive trade balance since from 1987/1988; reduction in the deficit of capital account balance between 1992 and 1994; improvements in the current account balance and finally in the overall balance of payments as of June 30 1996,[27] there are indications that if such trends are maintained, then financial liberalisation may be more successful in the near future. Nevertheless, it all depends on the responsiveness of savings, investment and the growth rate to real interest rate and as well to other non-financial factors.

2.5 CONCLUSION

The financial sector in Cameroon is not quite developed. The financial sector, measured by the ratio of financial assets to GDP, is shallow. The ratio of broad money to GDP, M2/GDP, averaged about 0.21 (see Table 2.11). However, when compared with other countries in the Sub-Saharan region, the sector could be considered relatively deep. For instance, the ratio of M2 to GDP is abysmally low in countries like Rwanda, Niger, Burundi and Burkina Faso

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[26] *Finance and Development/June 1997 op cit p. 10.*

[27] *See the Twenty-third Report 1993/94 of the National Credit Council of Cameroon. p. 20-25.*

where it averages 0.12, 0.13, 0.14 and 0.16 respectively (Abebe, 1990). The financial system in Cameroon is quite diversified and is manifested by the existence of financial institutions of various types including commercial banks, non-bank financial institutions, insurance companies, and government monopolised financial parastatals (see Table 2.1). However, semi-formal and informal financial units also exist and operate in Cameroon with remarkable performances.

Although the Cameroonian authorities have allowed the market forces to play a relatively influential role in the financial system, the government still maintains a formidable presence in this financial sector. Thus, financial liberalisation does not mean 'free banking'. Governments will continue to intervene in the financial sector in a number of ways: banks will be supervised for prudential reasons; some financial companies are publicly owned; and the government may be a major borrower. Furthermore, the operation of a regime of minimum interest rates on deposits and maximum lending rates is also another means of intervention.

Finally, even though Cameroon's financial system has undergone some reforms, the impact however, of interest rates on financial deepening and thus growth has not been very encouraging. The reason may be that, most banks were still insolvent in the reform period, with remarkable non-performing loans. These

banks balance sheet had to be restructured during the same period to remove bad debts. As such, there is the tendency that depositors are not yet confident with the banking system. Nevertheless, with a relatively favourable macroeconomic balance coupled with low inflation, CFA devaluation, adequate bank supervision by COBAC now in place, and with the other reforms still underway, much could be expected on the performance of the Cameroonian financial sector in the future.

PART TWO

THEORETICAL BASE AND EMPIRICAL ANALYSIS

Part two of this study presents the methods of analysing the data and the results of the estimations. These involve the specification of the growth, incremental capital output ratio, savings and investment functions model as well as the discussion of estimation procedures. However, the specification procedure and how the problems of estimations are tackled are examined in chapter three. Chapter four handles the estimation and interpretation of results.

CHAPTER THREE

SPECIFICATION AND ESTIMATION PROCEDURES OF MODELS

3.1 INTRODUCTION

There exist a causal link between interest rates and the variables of economic development such as savings, investment and growth. Nevertheless, a variety of other factors also contribute either directly or indirectly to the variation of these variables. Such a relation can be described very concretely in mathematical models. These are introduced in equation (3.7). Since the growth process works through savings and investment,[1] savings models in the form of aggregate and financial savings and two equations for investment (for reasons stated in sections (3.4) and a growth equation are specified. In order to carry out these specification procedures which involve a determination of the dependent and explanatory variables to be included in the models, and the a priori theoretical expectations about the signs of the parameters of the models, the

[1] *This fact is expressed in both the Harrod-Domar model and the Mckinnon-Shaw hypothesis.*

general economic theory and phenomenon that characterise the various target variables - the growth rate, savings and investment is examined.

For each of the models, a post-reform dummy will be introduced in order to capture the effects of interest rate liberalisation.[2] Furthermore, the relative price uncertainty which characterises the reform period necessitates the use of the standard deviation of real deposit rate from 1970 to period t as a proxy for uncertainty.[3] The use of the standard deviation of real deposit rate is preferable to the post-liberalisation dummy in that it attempts to quantify uncertainty (Libby, 1991).

For this reason, the post-reform dummy introduced in the growth and private investment equations will be replaced by a dummy for uncertainty.

3.2 THE GROWTH FUNCTION

There are two concepts of change, or growth in common use and this sometimes leads to confusion (Thad, 1988, p. 28). Absolute change which represents the difference in the value of a variable from one period to another differs from relative change. The latter is the proportionate change in a variable from one period to another. Precisely, it is the rate of change or growth of the

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[2] *The introduction of a post-reform dummy is due to the impossibility of having quarterly data for sub-period estimations.*

[3] *During adjustment or reforms private investment usually follow a cycle or declines Serven and Solimano (1993) and increased relative price uncertainty is proposed as the cause Conway (1988), cited by Libby, (1991).*

variable concerned. For instance, the rate of growth of consumption given as the current consumption less previous period consumption divided by the level of consumption of the previous year, represents the growth equation of the consumption function. In economics, generally, the term growth function or equation is used synonymously to mean the entire growth rate of economic activities which is subsumed in the GDP of the country concerned (Malcolm et al., 1987). Therefore, the growth rate of GDP is adopted as the growth function.

3.2.1 Interest Rates and Economic Growth

In this Keynesian theory of income determination investment is assumed as a crucial factor in income or output growth (Carney, 1967). This notion is also expressed in the Harrod-Domar model where capital remains the major element in the growth process. However, investment in the form of capital formation or savings is affected by the interest rate policy.[4] These arguments brings the notion of financial development and economic growth of which Patrick (1966) specifically looked into the causal relationship between them and identified two possible patterns of causality.

The `demand-following' pattern which assumes that growth induces the financial system to expand, and finance adapts rather passively to developments

[4] *Keynes liquidity preference theory argues for a policy of low rates to promote investment which is negatively affected by rising interest rates. But the financial liberalisation theory of Mckinnon and Shaw (1973) opts for higher rates of interest to foster investment through increased savings rate.*

in the real economy, appears to have been subscribed to by most Keynesian economists of the 1950s and 60s. While the investment/savings - liquidity framework takes a central place in Keynesian economics, with interest rate as the key endogenous variable equilibrating aggregate demand and supply, the actual intermediation between the savings and investment circuit has received less attention (Nissanke, 1994). However, the above conventional wisdom was later challenged. According to Mckinnon (1973) and Shaw (1973), the financial system precedes and induces real growth, assuming the role of channelling scarce resources from savers to investors according to relative rates of return. This supports the 'supply-leading' pattern of Patrick's dichotomy. Based on these aspects, the growth model or equation (3.1) could be expressed as a function of investment and the interest rate. The interest rate becomes an exogenous variable in the financial liberalisation theory. Thus, the growth model becomes:

$$GR = GR (ITY, r) \qquad [3.1]$$

Where GR in the real growth rate, ITY represents total investment rate and r in the real deposit rate. The financial liberalisation theory advocated by Mckinnon (1973) and Shaw (1973) therefore argues for improved growth through financial sector development. Specifically, the policy prescription for financially

repressed economy in the Mckinnon-Shaw models is to raise institutional interest rates and or reduce inflation.

Accordingly, several studies undertaken demonstrate that real interest rates impact positively on economic growth through the inter-relationship that exists between savings and investment and that economic growth is forgone for every one percentage point by which the real rate of interest is set below its equilibrium level Fry (1980); Lanyi and Saracoglu (1983); Oshikoya (1992), though less favourable results have been found in other studies (Khatkhate, 1983); (Gupta, 1984). Nevertheless, the role of interest rate should not be over-emphasised in the growth process as many other factors examined in section (3.2.3) contribute in the development of an economy. Oshikoya (1992) assumes that the real growth rate depends on real deposit rate, total investment, and inflation rate or financial instability, CPI which represents consumer price index. This notion extends equation (3.1) further to :

$$GR = GR(r, ITY, CPI) \qquad [3.2]$$

3.2.2 Switching Regression Methods and Spline Functions

Considerable attention has been devoted in recent years to the estimation of regression models in which the parameters are not necessarily assumed to have fixed value in perpetuity (Goldfeld and Quandt, 1976). The assumption of

such parameter variation is natural if one contemplates that situations may exist in which it is no longer appropriate to presume a continuous regression model or that possibility exists for some fundamental or `structural' change in the economic system being studied. Parameter variation is modelled in two principal ways. The first of the approaches typically allows for an infinite number of possible parameter values and for random parameter variations. In this case the appropriate econometric technique is the random coefficients regression model or one of its particular varieties such as the error components model or linear dynamic recursive model (Cooley and Prescoh, 1973; Ducan and Horn, 1972; Hildred and Houck, 1968; Rosenberg 1972; Swamy 1970).[5]

We applied the alternative case in which the number of possible states for the parameter vectors is finite (and infact, usually very small). Precisely, the study makes use of two possible states. In this content each state of the parameter vector is sometimes referred to as a regime. These regimes may be associated with such things as the state of the business cycle or other more fundamental structural changes in time series applications. For instance, this study considers the change from a repressed to a liberalised financial system as a basic change in policy structure, which necessitates two possible parameters for the interest rate variable. In the more general switching regression model,

[5] *Goldfeld and Quandt op cit.*

the variance of the error term is assumed to be the same throughout the time period being studied but both the intercept and slope (representing the co-efficients of the regression) may change at the point of structural break (Pindyck and Rubinfeld, 1991, p. 119). An F - test may be performed in such cases to assure that there is a regime switch and the break is statistically significant (Tsurumi, 1988)[6]. Most econometric models so far studied have been continuous, with small changes in one variable having a measurable effect on another variable. However, this framework was modified with the introduction of dummy variables to account for shifts in either slope or intercept or both (Pindyck and Rubinfeld, 1991, p. 116).

Arbitrary units are assigned to dummy variables to approximate at best, the variations in the factor which needs to be expressed in quantitative terms (Koutsoyiannis, 1977). They are used as proxies for other variables which cannot be measured in any particular case for various reasons. Accordingly, assuming possible changes in a structural relation with the restriction that the line being estimated is continuous, situations will occur in which the models of the regressions representing the various regimes meet or intercept at any particular point. Goldfeld and Quandt (1976) acknowledged that occasionally such meeting conditions are justified from a theoretical stand point by

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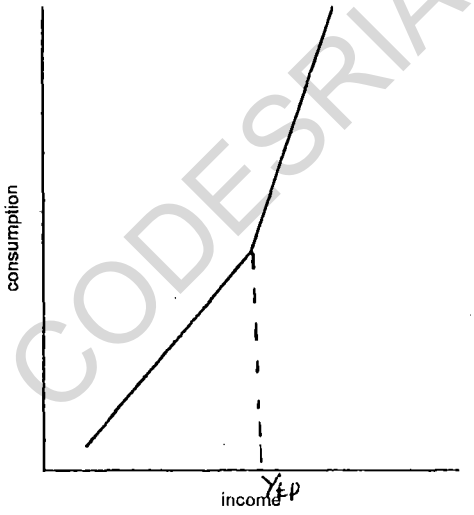
[6] *This was cited and considered by Libby Rittenberg (1991). The Chow F- test serves as a test of structural stability or change.*

considering the example of regressing a measure of technological change over time. With continuity in technological change, even if the rate of change are different during different periods, one would expect the regressions representing various `technological regimes' to meet at the point in time where the co-efficient shifts occur. This point drives us to an important notion - the piecewise model or spline function.

In order to better understand the above points, we shall consider a simple example as shown graphically below.

Figure 2: Piecewise-Linear regression model



The function represented in the figure above is consumption expressed as a function of income. The true model is continuous with a structural break or change at the abscissa value of Ytp, where t represents time and p the break period. Goldfeld and Quandt (1976) and Quandt (1958) concluded that when

the abscissa values at which the regressions are to meet are given (also known as mesh points or knots), the resulting estimations are spline functions. Piecewise linear models are special cases of a much larger set of models or relationships called spline functions which consist of straight-line segments. Spline functions are functions with distinct pieces but the curve representing each piece is a continuous function and not necessarily a straight line (Pindyck and Rubinfeld, 1991, p. 118). The example in the graph above assumes that the structural break occurs at time p and may occur as a result of several causes influencing consumption through income changes. There is no discontinuity or shift in the consumption level from year to year and this one assumes one break or two regimes with two straight-line segments. Most commonly, spline functions are assumed to be smooth (i.e., at the point(s) at which segments meet, it is assumed the segments have identical first and second derivatives and allow discontinuities in the third derivative only) (Pindyck and Rubinfield, 1991). In such a typical case, the spline is chosen to be a polynomial of the third degree and the procedure guarantees that the first and second derivatives will be continuous.

The model given in figure 2 above can be estimated as follows:

$$C_t = \beta_1 + \beta_2 Y_t + \beta_3 (Y_t - Y_{to}) D_t + \varepsilon_t \qquad [3.3]$$

where C_t is consumption, Y_t represents income in year t and Y_{to} is income in year which structural break occurs and

D_t is such that $D_t = \{1$ if $t > to$ and 0 otherwise$\}$

For years before and including the break, $D_t = o$, so that

$$E(Ct) = \beta_1 + \beta_2 \ Y_t \qquad [3.3.1],$$

where $E(C_t)$ is the expected mean of the consumption function. However, after the break, implying a structural change, $D_t = 1$, so that

$$E(C_t) = (\beta_1 - \beta_3 Y_{to}) + (\beta_2 + \beta_3) Y_t \qquad [3.3.2]$$

Thus, before the break, the consumption function has a slope of β_2, but the slope changes to $\beta_2 + \beta_3$ including the intercept afterwards. No discontinuity exist because,

$E(to) = \beta_1 + \beta_2 Y_{to}$ from equation (3.3.1)

$= (\beta_1 - \beta_3 \ Y_{to}) + (\beta_2 + \beta_3) Y_{to} = \beta_1 + \beta_2 Y_{to}$ from equation (3.3.2)

Furthermore when $\beta_3 = o$, the consumption equation reduces to a single straight-line segment, so that a t - test of $\beta_3 = o$ provides a simple test for structural change. It is possible that many structural breaks occur in different time periods. This study deals with one break or two regimes.

With the regression method, it depends on whether the break point is known. When the latter is known, the consumption model in equation (3.3) could be written as

$$C_t = \beta_1 + \beta_2 Y_t + \beta_3 Y_t D_t \qquad [3.4]$$

However, when the break is not known, the break point as well as the regression parameters can be estimated using the ordinary least square or maximum likelihood techniques.[7] In this study the break point (equilibrium interest rate) is unknown and assuming that the error variance is equal for the entire period of study, this involves estimating equation (3.3) for the value of the point of structural break. The structural break is chosen as the break point or the value of Yto that minimises the sum-of-squared residuals (SSR) from the regression (or alternatively that maximises R^2). This study calculates the equilibrium interest rate as that which minimises the sum of squared residuals reserved for chapter four.

Libby Rittenberg's (1991) work on the effect of the interest rate policy on investment spending under two regimes - a repressed financial and a deregulated financial system is a good example. Under the assumption that the response of investment to changes in other variables is the same under both the `repressed' and the `liberalised' regimes,[8] a linear spline investment function was specified as

$$I = \alpha + \beta r + \theta (r - o_r) D + \sum \delta i i + \mu \qquad [3.5]$$

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[7] *The method works by either maximising the usual likelihood function or with the ordinary least square by minimising the sum of square, of residuals (SSR) and searching over all possible break points Pindyck and Rubinfeld (1991), Goldfeld and Quandt (1976) and Quandt (1958).*

[8] *This hypothesis was not tested.*

Where I is the real private investment, r is the real rate of interest, o_r is the equilibrium rate of interest (that is the switching/break point), D is a dummy variable equal to 1 whenever $r > o_r$ and zero otherwise, the XI are other factors assumed to affect the investment decision, μ is the error term, and α, β, and δi are co-efficients to be estimated.[9] The periods of financial repression was proxied to below-equilibriun rates of interest, where realised investment spending would be less than desired investment spending, whereas above-equilibrium interest rates, realised and desired spending should be equal after accounting for any adjustment lags.

Thus when $r < o_r$,

$$I = \alpha + \beta r + \sum \delta Il + \mu \qquad [3.5.1]$$

and β is expected to be positive. In other words, when the financial system is repressed (i.e., interest rate held below equilibrium) higher interest rates yields higher investment spending. However, when the system is liberalised, (interest rates held above the equilibrium, that is $r > o_r$) the equation becomes

$$I = [\alpha - \theta o_r] - [\beta + \theta] r + \sum \delta Il + \mu \qquad [3.5.2]$$

A simple t - test on θ provides the test of whether or not there is a regime switch or structural break. And theoretically, $(\beta + \theta)$ is negative, implying a negative correlation between investment and interest rates above the equilibrium. This

[9] *Investment function was interpreted as reflecting effective or realised investment spending rather than desired investment.*

hypothesis is refuted in this work. The specification of linear spline growth and ICOR functions for Cameroon are described below.

3.2.3 The Linear Spline Growth Function for Cameroon

According to the earlier discussion on the theories of economic growth which involves real as well as financial factors, growth functions were specified in equations (3.1) and (3.2). The growth rate as expressed in equation (3.2) is assumed to depend on real deposit rate, r, total investment rate, ITY, and inflation rate or financial instability, CPI. However other factors which are non-financial have an impact on the growth rate in Cameroon. These variables are introduced to account for the analysis that reform in the financial sector should be co-ordinated with developments in the real sector. The question one raises is that why after more than a decade of economic reforms there has been a slow response on investment and growth in developing countries? In the words of Njuguna, 1997, p.27), "part of the problem has been that most of the pre-conditions have not been met, the financial reforms are still continuing in some countries, and shocks and constraints limit the success of adjustment in some countries". These shocks and constraints include fiscal imbalance, debt overhang and terms of trade.

For instance, Serven and Solimano (1993) argued that almost a decade ago, the debt crisis and global shocks affecting developing countries set off a protracted period of instability and lack of external financing that led to a drastic decline in capital formation. The unresolved debt problem and not the debt per se is an obstacle to investment and growth.[10] This debt problem could be proxied to the debt service export ratio (DSR) which is a claim against a country's export earnings or domestic output. The slow response of the growth rates in some developing countries is explained by the size of the debt service ratio which constitute an outflow of a country's resources.

The exchange rate policy is also important in the adjustment process. Since sustained misalignment of the real exchange rate generates severe macroeconomic disequilibrium, most discussions on macroeconomic policy in developing countries have emphasised the central role it plays in the adjustment process (Dordunoo and M'bet, 1995). It is important to evaluate the impact of the real exchange rate on economic growth which is generated by investment and could be estimated in terms of external shocks subsumed in the factors determining the real exchange rate.[11]

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[10] *The assumption is that a debtor cannot establish further relations with its creditors if he or she keeps barging for claiming alimony.*

[11] *Using a modified version of a model put forth by Ghura and Green (1992), M'bet and Niamkey (1993) specified the real exchange rate as a function of the terms of trade, the openness of the economy etc. in CFA countries.*

However the effect of exchange rate on aggregate investment is theoretically ambiguous (Felipe and Rodrigo, 1993). The ambiguity expressed by the real exchange rate requires an individual introduction in the growth and investment equations other variables that exhibit shocks. Considering that the trade-able sectors in Cameroon and other CFA countries are important and because agricultural exports form a larger share in GDP and labour force, devaluation will stimulate investment and growth. Thus, with the devaluation of the CFA franc in 1994, the real exchange rate index is expected to fall and boost up export production.[12]

In a nutshell, the growth rate is also influenced by monetary and fiscal policies[13] since they affect investment differently (Serven and Solimano, 1992) and external shocks such as the terms of trade, openness, debt overhang and the real exchange rate (Dordunoo and M'bet, 1995; Mbet and Niamkey, 1993; Njuguna, 1997). Thus the growth model is expressed as follows;

$$GR = GR (r, ITY, CPI, TOT, OPEN, DSR(-1), RER, CPR) \qquad [3.6]$$

where the additional variables are OPEN, DSR(-1) RER, and CPR representing the openness of the economy defined as the sum of exports and imports to

[12] *The real exchange (expressed as an index with 1994 = 100) will absorb the effect of the devalued CFA franc thereby stimulating an increase in the production of tradeables or exports.*

[13] *Monetary policy in this case affects growth through inflation represented by the change in consumer price index. Expansionary monetary policy leading to higher inflation reduces real income and growth, while fiscal policy in terms of fiscal deficit or pressure may raise interest rates and reduce credit to the private sector and crowd out private investment (Chhibber and Dailami, 1990).*

GDP, lagged external debt service ratio, the real exchange rate, and the credit available to the private sector as a percentage of GDP respectively while the other variables remained as defined above.

3.2.3.1 Definition of Variables and Statistical Relationship

On the basis of the above information a linear spline growth equation is assumed to be a function of:

(a) Real deposit rate (r). Higher real interest rates are often needed to promote savings and a more efficient allocation of capital and thus increased growth (Malcolm et al., 1987; Thorton, 1991). Therefore, a positive correlation exist between the deposit rate and economic growth at below and above the equilibrium rate, with a break at the equilibrium point.

(b) Total investment rate (ITY). Following the Keynesian theory of income determination a rise in the level of investment stimulates growth (Carney, 1967). However, the Mckinnon-Shaw model assumes that rising capital formation requires an increase in the real deposit rate. Thus, a positive relationship should exist between real deposit rate, investment and growth respectively.

(c) Inflation rate (CPI). An expansionary monetary policy that leads to a rise in inflation has the effect of reducing real income and growth (Njinkeu, 1997) and inflation serves as a proxy for financial instability Oshikoya (1992). Thus, a rise in inflation will affect economic growth negatively via a contraction of real output.

(d) Terms of trade (TOT). A deterioration in the terms of trade impacts negatively on investment through a fall in prices of export production and thus growth as reflected in a fall in the current account balance. We have assumed as base year 1985 in order to fully capture the effect of economic crisis or falling export prices which started in Cameroon in 1986.

(e) Openness (OPEN). Outward-oriented economies grow more. More open economies are expected to allocate resources based on comparative advantage which materialises following an adequate incentive structure in the financial sector (Njinkeu, 1997). Thus, as opened economy should tap in resources via foreign exchange or capital inflows. The co-efficient of OPEN is expected to be positive then.

(f) Lagged external debt service-export ratio, DSR(-1). Payments of external debts represent a leakage or a loss of economic resources from a country. This should result in a contraction of national income and as such a

negative correlation between the external debt burden and growth exists through its negative impact on investment.

(g) Real exchange rate (RER). It measures price competitiveness of a country's export relative to its trading partners. A devaluation of the RER render exports competitive leading to a rise in investment and thus growth where as appreciation does the reverse. Defined as the price of tradeables to that of non-tradeables goods, it does on the whole help in analysing the resource flow and determining the cost of producing tradable goods relative to non-tradable goods (Amin, 1996a, p. 29). It is expressed in index form and has been rebased to 1994 because the year coincided with the devaluation of the CFA franc in the process of adjustment by CFA member countries. A decline (increase) in the index indicates real depreciation (appreciation) of the exchange rate. The RER has been derived as follows:

RER = ERx CPI (World) / CPI (Cameroon) where ER is CFA francs per dollar and CPI represents the consumer price index (expressed as an index with 1994 = 100).

(h) Credit as a percentage of GDP (CPR). The greater the amount of credit to the private sector, the more projects will be carried out. A positive relationship between credit, private investment and/or growth is

expected. The amount of credit to the private sector is conditioned by fiscal pressure or fiscal deficits. High fiscal deficits push up the price of capital or reduce the credit available to the private sector or both, thereby crowding out private investment (Chhiber and Dailami, 1990). This causes a fall in the rate of economic growth.

(i) The effects of liberalisation will be captured by a post-reform dummy, DL and alternatively be replaced by a proxy which quantifies uncertainty. This proxy is the standard deviation of the real deposit rate, σ. We expect the sign of its coefficient to be positive to show an efficient financial system.

Under the assumption that the response of the growth rate to changes in other variables is the same under both the `repressed' and `liberalised' regimes, the linear spline growth function to be estimated is expressed as follows:

$$GR = a_0 + a_1 r + a_2 (r-r_0)D + a_3\, ITY + a_4\, CPI + a_5\, TOT + a_6\, OPEN + a_7 DSR(-1) + a_8\, RER + a_9\, CPR + a_{10}\, DL \qquad [3.7]$$

where a_0 to a_{10} are coefficients to be estimated, r_0 is the equilibrium interest rate and the other variables remain as defined above. However, DL the post-reform or liberalisation dummy will assume values of one from 1990 to 1996, and zero otherwise. Another growth equation may be estimated by replacing DL with σ, the standard deviation of the real deposit rate from 1970 to period t as already

mentioned. D in the equation also represents a dummy variable, equal to one when r is greater than r_0 (assumed to be the period 1990 to 1996), or equal zero when r is less than r_0 (assumed to be the period 1972 to 1989). A simple t - test on a_2 provides the test of whether or not there is a regime switch. Theory suggests that (a_1+a_2) should be negative if $r > r_0$ (i.e. during financial liberalisation), thus bringing the model to

$$GR = (a_0 - a_2r_0) + (a_1 + a_2)\, r + \sum \delta i i \qquad [3.7.1]$$

where XI are the other factors or variables and δi takes value of a_3 to a_{11}. This hypothesis indicates that the growth rate will be negatively correlated with above equilibrium interest rates. However, the study assumes that it all depends on the productivity effect of investment as measured by ICOR. On the other hand, when $r < r_0$ bringing the model to

$$GR = a_0 + a_1 r + \sum \delta i i \qquad [3.7.2]$$

and theory a priori would suggest that a_1 is positive and in this case we consider the productivity effect of investment to be less than the positive effect of investment. Libby (1991) argued that real growth rate will be positively correlated with interest rates under such a condition of below equilibrium rate.

3.3 THE EFFICIENCY OF INVESTMENT AS A FUNCTION

3.3.1 Interest Rates and Efficiency of Investment

The Mckinnon-Shaw (1973) empirical proposition is that increased real interest rates raise the quantity and quality of investment (Roe 1982; Thornton, 1991). This enhances the possibility of high growth rate because the quality or efficiency of investment is one important factor apart from investment itself that promotes growth, (Peaker, (1974); Alan and Stuart 1997).

The term incremental capital output ratio, (ICOR) is often used in assessing the impact of efficiency of investment on output growth Malcolm et al; (1987). The ICOR measures the productivity or efficiency of additional capital or investment. Faini and de Melo (1990) defined and computed ICOR as the ratio of gross investment to a change in Gross Domestic Product (GDP).[14] Thus, ICOR as applied by Faini and de Melo (1990) is

$$ICOR = It/[GDP_t - (1-d)\, GDP_{t-1}] \qquad [3.8]$$

Where I is Gross investment and GDP is Gross domestic product in current prices, d represents depreciation which is equal to 0.07 from estimates in Cameroon and t the time period. The policy prescription in the Mckinnon and Shaw models is that raising the interest rate ceiling will encourage savings,

[14] *See Felipe and Rodrigo, ed by Serven and Solimano (1993).*

investment and thus growth. The average efficiency of investment also rises since low yielding investments are rationed out (Thornton, 1991).

However, a few studies like Fry, (1997) and Asian Development Bank (1985)) relate interest rates directly to the efficiency of investment but none has hypothesised an equilibrium situation. This concerns estimating the relationship between the interest rate variable and ICOR using a switching regression technique. The role of private investment in the growth process is important and requires that the efficiency of investment as affected by the interest rate policy be well verified. However, total investment rather than private investment and gross domestic product are used to calculate ICOR.[15] Private and public investments contribute to output growth but the marginal productivity of private investment exceeds the marginal productivity of public investment (Khan and Reinhard, 1990). Thus, the two variables are included in the ICOR model in order to assess the relative impact on total productivity.

3.3.2 Linear Spline Model for the Efficiency of Investment

The incremental capital-output ratio is assumed to depend on the real interest rates (r), private investment rate (IPRY) and public investment rate (IPUY). The model to be estimated has the following equation,

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[15] *It was necessary to use private investment and its corresponding output to calculate ICOR. However, the non-availability of data made us to assume that private sector output is proportional to total output or GDP.*

$$ICOR = b_0 + b_1 r + b_2 (r-r_0) D + b_3 IPRY + b_4 IPUY. \qquad [3.9]$$

In the above equation, r_0 is the equilibrium interest rate while D still assumes the assumption as in equation (3.7). The model hypothesises that the efficiency of investment will be negatively and positively correlated with interest rates below and above the equilibrium rate respectively. Since ICOR must be inverted to incremental output-capital ratio (IOCR) in order to easily measure efficiency, then b_1 would be positive when $r < r_0$, hence reducing the equation to

$$ICOR = b_0 + b_1 r + \sum \gamma i \, Zi \qquad [3.9.1]$$

Where γi are coefficients of the variables IPRY and IPUY represented by Zi. But when $r > r_0$ (proxied as periods of financial liberalisation), (3.9) should read as

$$ICOR = b_0 + b_2 r_0 + (b_1 + b_2) r + \sum \gamma i \, Zi \qquad [3.9.2]$$

and theory proposes a priori that $(b_1 + b_2)$ should be negative, implying rising productivity of investment when the interest rate exceeds its equilibrium rate. A t-test on b_2 will justify whether there is a structural break or a regime switch at r_0.

3.4 THE SAVINGS AND INVESTMENT MODELS

3.4.1 Introduction

In financial policy, it is important to distinguish between the implications of real interest rates for consumption-saving decisions on the one hand, and for decisions about uses of savings as concerns the channels through which savings flow, on the other hand (Malcolm et al., 1987). The former statement revolves around estimates of the interest elasticity of savings, whereas the second concerns the elasticity of demand for liquid assets with respect to the real interest rate.

This implies that real interest rates play a crucial role in the mobilisation of savings for development purpose. For instance, in the classical model, the savings function depends only on the interest rates as opposed to the Keynesian theory which makes the function depend instead (or as well) on income, providing the basis of the multiplier effect (Allen, 1967, p. 132). Thus, in the General theory of Keynes, the level of income determines savings and the rate of interest determines where it is placed (Chick , 1983). The Keynesian theory considers the role of interest rate only in the determination of investment and assumes a negative relation between the two variables. This is opposed to the financial liberalisation theory which asserts that the interest rate plays a positive role in savings and investment decisions.

However, the amount of savings channelled through the financial system (i.e. real money demand) seems to be more important in the development process. As Malcolm et al., (1987) assert "where the interest elasticity of savings is small or zero but the elasticity of demand for liquid assets with respect to real interest rate is positive and large, financial policy may still have significant impacts on savings mobilisation through the financial system". Thus, savings behaviour is a crucial element of the process of economic growth. This statement confirms the financial liberalisation theory which argues in favour of improved growth through financial sector reforms and rising real interest rates. This theoretical framework is provided by Mckinnon (1973) and Shaw (1973) whereby the savings/liquidity-investment relation is fostered by positive real interest rate. This differs from the Keynesian perspectives where the relation stems from investment to savings.

3.4.2 Theories of Saving

3.4.2.1 Interest Rates and Aggregate Savings

There is scepticism that interest rates, whether nominal or real, have any significant impact on private-sector consumption behaviour in either developed or developing countries (Malcolm et al., 1987 p. 341). The interest elasticity of saving has been found to be insignificant. The notion of zero or minimum

elasticity is observed in the earliest savings functions of Keynes (1936) absolute income hypothesis where, real personal consumption and savings are an increasing function of real personal disposable income. Hypotheses of private-sector saving behaviour began to incorporate interest rates as determinants of savings behaviour only from the 1950s (Malcolm et al., 1987). This development replaced the conception of current income as the major explanatory variable with some approximation to 'normal' income representing the stream of expected income over some time period (Laabas, 1992). Examples of this include the life cycle model of Ando and Modigliani (1963), and Friedman's (1957) permanent income hypothesis, both of which had, by the 1980s, been extensively applied in studies of savings in developing countries (Malcolm et al., 1987).

The life-cycle hypothesis is founded on the proposition that individuals save in their working years in order to maintain a stable stream of consumption during retirement years. Net lifetime savings of individuals will be zero in static economies and positive in growing economies. The model considers the interest rate as having a positive role in affecting savings decision, but the level of absolute income plays no role in explaining the ratio of savings to income. The permanent-income hypothesis assumes that savings is a function of permanent and transitory incomes, but further specifies that the fraction of savings out of

permanent income depends on several other variables including the real interest rate.[16]

Research on consumption and saving in both industrial and developing countries has increasingly relied on variants of the permanent-income and life-cycle hypothesis (Malcolm et al., 1987), but it appears real interest rate assumes a central place. Several studies including Gupta (1970; 1984)[17] Gupta (1987); Fry (1977; 1978); Giovannini (1983); de Melo and Tybout (1986); Oshikoya (1992); Ogungbenro et al; (1996) etc., have examined the effect of real interest rate on aggregate savings regressing the ratio of savings to GDP or GNP on variables such as income growth, permanent income, transitory income, inflation, foreign savings and real deposit rate. However, the results were mixed as concerns supports for the Mckinnon-Shaw hypothesis.

The level of savings is therefore influenced by many other factors apart from real interest rate. With the problems of data availability in most developing countries, the possibility of applying more sophisticated versions of the aggregate savings function becomes difficult. The most simple savings function like those estimated in Fry (1977, 1978); Oshikoya (1992); Ogungbenro et al (1996); and de Melo and Tybout (1986) are considered. The real money demand is also important in financial policy. As Malcolm et al (1987)

[16] *See Malcolm et al., (1987, p. 341 - 2), for details on lifecycle and permanent income hypotheses.*
[17] *See Thornton (1991) for details.*

acknowledged "whereas the role of the real interest rate in savings - consumption decisions is a matter of some dispute, the role of real interest rates in influencing the demand for liquid assets is rarely questioned, whether in developed or developing countries, by Keynesians or Monetarists".

3.4.2.2 Interest rates and financial savings

The demand for liquid assets in financially repressed economies or where nominal interest rates are not allowed to adjust fully to expected rates of inflation as is true in most developing countries, has been identified as a function of income, the real interest rate, and the real rate of return available on non-financial assets.[18] Concerning the relationship between interest rates and financial intermediation, the financial repression paradigm postulates that higher real rates of interest increase the incentive to save by means of bank deposits (Thornton, 1991). Thus, Malcolm et al (1987) assert that, "for at higher levels of real interest rates the public will be willing to hold larger liquid balances". A few studies including Lanyi and Saracoglu (1983); Oshikoya (1992) and Peninah (1995) have provided evidence on the relationship between interest rates and the growth of the broad money supply in real terms. The latter two studies regressed real demand for liquid asset on real income or GDP, real

[18] *Malcolm et al; (1987) op cit.*

deposit rate, private investment and lagged real money balances and came out with a mild support for the financial liberalisation theory.

3.4.3 Interest Rates and the Investment Theory

A relationship exists between the real interest rates and the level of investment as observed in the Keynesian liquidity preference and financial liberalisation theories. However, like consumption, investment depends on many things, some more important than others (Campagna, 1974), but no one has been able to sort them out and developed a coherent investment function (Shozaburo, 1975). It is well known that the neo-classical theory of monetary growth has no independent investment function but there appears to be an investment function derived from Keynes's theory of investment, in the Keynesian theory of monetary growth (Shozaburo, 1975).

Keynes (1936) observed that investment depends on the prospective marginal efficiency of capital relative to some interest rate that is reflective of the opportunity cost of the invested funds. Private investment according to Keynes was intrinsically volatile since any rational assessment of the return on investment was bound to be uncertain. After Keynes, the evolution of investment theory was linked to simple growth models, which gave rise to the accelerator theory, popularised in the 1950s and early 1960s and widely used

even today in practical growth exercises (Serven and Solimano, 1992). The accelerator theory makes investment a linear proportion of changes in output. In a model of private capital formation within the flexible accelerator framework that incorporates developing country's structural and institutional characteristics, Blejer and Khan (1984) emphasise explicitly the role of fiscal and monetary policies.

The model which analytically determines an investment equation, makes private investment of many factors which include bank credit to the private sector, cyclical factors and public spending. These factors exhibit monetary as well as fiscal impacts. The roles of monetary, fiscal and exchange rate policies in investment decisions have also been emphasised by Serven and Solimano (1992) and others. Restrictive monetary and credit policies affect investment indirectly by raising the real cost of bank credit or user cost of capital and leads to a reduction in investment (de Melo and Tybout 1986; Greene and Villanueva, 1991).

As concerns the fiscal policy, its effect on investment is through fiscal deficits. High fiscal deficits push interest rates up or reduce the availability of credit to the private sector or both, crowding out private investment (Serven and Solimano, 1992; Chhiber and Dailami, 1990).

The effect of real exchange rate on investment may occur through real devaluation or appreciation. Real devaluation may raise the price of goods especially imported capital goods. Investment goods include foreign and domestic components such that devaluation raises the cost of important components which could reduce the supply of those imported components of investment. This may negatively affect investment if the imported components form a larger share of total input. In effect, interest rate and exchange rate policies affect the resources available to the private sector (Serven and Solimano, 1992). Appreciation of the real exchange rate will obviously have the opposite effects.

The model of interest is the relationship existing between the real interest rate and investment within the framework of financial repression and liberalisation. Several studies have been carried out to this effect (Oshikoya 1992; Ogungbenro et al., 1996; Fry 1980; Libby 1991; de Melo and Tybout 1986) and two channels for the effect of real interest rate on investment are postulated (Thornton, 1991). One is that the higher rates increase the availability of domestic credit to finance investment, while the other potential channel is through Mckinnon's (1973) hypothesis of the complementarity of money and capital. Thus, two investment functions are estimated. The ratio of domestic credit to GDP will confirm the credit availability mechanism and the other will

be the investment equation proper. The ratio of Domestic credit to GDP is treated as an endogenous variable to eliminate any simultaneous equation bias in the investment estimate (Ogungbenro et al., 1996; Fry, 1980); Oshikoya, 1992).

The effect of financial liberalisation on investment could be studied by regressing the ratio of domestic credit to GDP/GNP on per capita GDP/GNP, real deposit rate and lagged domestic credit ratio as in Oshikoya (1992), Ogungbenro et al., (1996), Fry (1980). In addition an investment equation proper was assumed to depend on real deposit rate, real economic growth rate, changes in terms of trade, public investment rate, inflation rate and lagged debt service ratio Oshikoya (1992). The variables used by de Melo and Tybout (1986) in their study of financial liberalisation were current and lagged real income growth, current and lagged real money growth, the real interest rate, the real exchange rate.

3.4.4 Definition of Savings and Investment Equations for Cameroon

3.4.4.1 Savings Equations

The aggregate savings function is presumed to take the following form:

$$S = \alpha o + \alpha_1 GR + \alpha_2 r + \alpha_3 FS + \alpha_4 S(-1) \qquad [3.10]$$

The determinants of the ratio of gross domestic savings to GDP, S, are hypothesised to include economic growth rate (GR), real deposit rate (r), ratio of foreign savings to GDP (FS), and lagged savings rate (S(-1)). The theoretical justification for the inclusion of real economic growth rate is that, we consider it as proxy to deviations from permanent income which standard life-cycle theory suggests, should induce savings rate fluctuation. Lagged savings takes care of the adjustment process which may be spread over multiple periods and foreign savings is included because it may crowd out domestic savings by allowing residents to consume at any given rate of capital accumulation (Ogungbenro et al., 1996). The Mckinnon-Shaw real money demand function for Cameroon can be specified thus

$$\text{InM} = \beta_o + \beta_1 \text{ In RGDP} + \beta_2 r + \beta_3 \text{IPRY} + \beta_4 \text{ InM(-1)} \qquad [3.11]$$

where InM, In RGDP and InM(-1) are the naperian logarithms of real broad money, real GDP and lagged real broad money respectively, whereas r is real deposit rate and IPRY is the ratio of private investment to GDP. The determinants of real money demand, M,[19] are based on the theories of savings discussed above. Real GDP is postulated to exert positive impact on real demand for money.

[19] *Real money demand (M) is defined as currency in circulation plus all types of bank deposits (excluding government and inter bank deposits and deposits held by non-bank financial institutions). This total is deflated by price deflator for GDP with 1990 = 100. The choice of the 1990 is based on the fact that the reforms of the financial sector was stepped up in 1990/91 with more flexibility in the interest rate structure. See the introduction of this study for details.*

3.4.4.2 Investment Functions

The investment equations to be estimated include the ratio of domestic credit to GDP and private investment. Based on the theory analysed above, the ratio of domestic credit to GDP (DC), is postulated to depend on, per capita GDP (LPCG) (in naperian logarithm), the real deposit rate, (r) and the lagged credit (DC(-1)) and the function is expressed as

$$DC = c_o + c_1 LPCG + c_2 r + c_3 DC(-1) \qquad [3.12]$$

As concerns the investment equation proper, the ratio of private investment to GDP is hypothesised to depend on several variables as outlined in section (3.3.3), and is expressed as follows:

$$IPRY = do + d_1 GR + d_2 r + d_3 TOT + d + IPUY + d_5 CPR + d_6 RER + d_7 DSR(-1) + d_8(br \text{ or } rl). \qquad [3.13]$$

where

GR = economic growth rate or growth rate of GDP

r = real deposit rate

TOT = terms of trade

IPUY = public investment rate or public investment as a percentage of GDP.

CPR = credit available to the private sector as a percentage of GDP

Price of capital = Central Bank discount rate (br) or real lending rate rl

RER = real exchange rate

DSR(-1) = lagged external debt service - export ratio.

However, the investment deflator which we consider as a proxy for the price of capital may also have served as a measure for fiscal pressure or monetary and credit policies.[20] Nevertheless the financial repression hypothesis suggests a positive relationship between real interest (deposit) rates and private investment rate. The economic growth rate is derived from the flexible accelerator model, public investment rate is included to test the degree of complementarity or substitutability between private and public investment. Changes in the terms of trade, real exchange rate and debt service ratios are proxy variables for macroeconomic instability and uncertainty that may impact negatively on private investment (Greene and Villaneuva, 1991; Libby, 1991; Serven and Solimano, 1993).

3.5 ESTIMATION TECHNIQUES

3.5.1 Introduction

The major statistical tool used in this study is the multiple regression analysis which is most commonly applied in econometric work. It is concerned with describing and evaluating the relationship between a given variable (often called the dependent variable) and one or more other variables often called the explanatory or independent variables). For a regression analysis to be carried

[20] *The difficulty in calculating the investment deflator and the non-availability of data on maximum lending rates for some years, made us to use the Central Bank discount rate as the price of capital. However, the real lending rate was introduced in the investment equation by regressing time series data from 1979*

out, three commonly used methods are employed to solve the regression equation. These are, the method of moments, methods of least square and the method of maximum likelihood. The method of least square is the automobile of modern statistical analysis. Despite its limitations, occasional accidents and incidental pollution, its numerous variations, extensions and related conveyances carry the bulk of statistical analysis, and are known and valued by all (Maddala, 1988, p. 36). Thus, we are making use of the ordinary least square regression procedure.

The relationship established between the dependent and independent variable in econometrics is as follows.[21]

$$Y_t = b_o + b_1 X_{t1} + b_2 X_{t2} + ... + bn\ X_{tn} + \epsilon_t \qquad [3.14]$$

Where Y_t = dependent variable at time t,

X_{ti} = independent variable i in period t,

b_o = the constant term,

b_i = the corresponding regression coefficient to the independent variable.

and

ϵ_t = the error term

[21] *Dummy variables will be included in the regression equations to take into account effects that are unmeasurable such as the effects of interest rate liberalisation on the dependent variables. For details on the use of dummy variables, see Koutsoyiannis (1977, p. 281 - 84) and Maddala (1988, p. 251 - 92).*

Even though the ordinary least square method is widely used, it relies on a number of assumptions. And just like any model that works under certain conditions, problems are bound to arise when such circumstances are not met. These problems are peculiar to a single-equation estimation and include: heteroskedasticity, serial correlation, multicollinearity, and nonstantionarity (specific to time-series data). An analysis of some residual based diagnostic tests used in the study to detect these problems and the solutions proposed to deal with them if need arises is described below.

3.5.2 Inherent Econometric Problems and some Solution

There are occasion in econometric modelling when the assumption of a common error variance, or homoskedasticity is unreasonable (Pindyck and Rubinfeld, 1991). In such cases, the null hypothesis of a constant error variance is rejected. The consequence of heteroskedasticity is that the ordinary least squares estimators are rendered inefficient. Thus, if the error terms do not have the assumed pattern of their behaviour, the evidence provided by the statistical tests is invalid (Koutsoyiannis, 1977). However, since heteroskedasticity does not usually occur in times-series studies (Pindyck and Rubinfeld, 1991), it is not considered as a serious problem. Thus, no formal test shall be carried out to detect its presence in this study.

Another assumption of the ordinary least square regression model is that there should be no exact linear relationship between any of the independent variables in the model. If any of such intercorrelation among the explanatory variables occurs, it becomes difficult to disentangle the separate effects of each of the independent variables on the dependent variable. The consequence of multicollinearity is that the sampling distributions of the coefficient estimators have relatively large standard errors and small t-ratios (Thad, 1988, p. 255). The variance-inflation factor (VIF-described by Maddala 1988, p. 220) could be used as a device to test for multicollinearity. But according to Klein,[22] intercorrelation of variables is not necessarily a problem unless it is high relative to the overall degree of multiple correlation. Since the problem of large standard errors and small t-ratios caused by multicollinearity could be solved by dropping some variables (Maddala, 1988, p. 243), during the estimation proper most of the variables defined in the various specified models may have to be re-defined and re-estimated so as to increase the power of the test statistic or R^2, and in doing so, hopefully the condition defined in Klein's rule shall be fulfilled.

Another assumption of the linear regression model is that the error terms are independent or else serial correlation will occur when the error terms corresponding to different observations are correlated. The consequence is that

[22] *L. R. Klein. An introduction to Econometrics (Englewood Cliffs, N. J. Prentice-Hall, 1962) p. 101 cited by Maddala (1988).*

the ordinary least square applied directly will no longer be efficient though unbiased. More precisely, R^2 as well as the t and F statistics tend to be exaggerated since the sampling distribution of the standard errors are underestimated (Thad, 1988, p. 227). The Durbin-Watson (D-W) statistic is the most common test used for the detection of serial correlation.[23] It involves testing the null hypothesis $\rho = o$ (ρ is the serial correlation coefficient) for no serial correlation against the presence of a first order autoregressive process - AR(1). A range of values have been defined for the D-W statistic which act as a guide to the decision of whether to accept or reject the null hypothesis. The D-W statistic lies on the 0 to 4 range with a value near 2 indicating no first-order serial correlation. Since D-W = 2(1-ρ), it implies there is no serial correlation ($\rho = o$) when the D-W statistic is close to 2. Positive serial correlation is associated with D-W values below 2 and negative serial correlation with D-W values above 2.

Since exact interpretation of the D-W statistic is difficult (Pindyck and Rubinfeld, 1991, p. 143), most tables include test statistics which vary with the number of independent variables and the number of observations. Two limits are given usually labelled dl and du representing lower and upper bound respectively. There is usually a range within which the results are inconclusive

[23] *See Maddala 1988, p. 186 - 205, and Pindyck and Rubinfeld 1991, p. 143 - 48.*

(that is when 4 - du < DW < 4 - d_l, and d_l< DW< du). The LM-test which is derived from a general principle called Lagrange Multiplier principle[24] can be applied in such cases. The test uses either the F statistic or ρ.F as the χ^2 with p degrees of freedom for the detection of higher order serial correlation. Thus, it is a test of Ho: $\rho_1 = \rho_2 = ... = \rho_p = o$ from the regression equation

$$y_t = \sum^{k}_{i=1} \chi_{it} \beta i + \mu t \qquad t = 1,2...n \qquad [3.15]$$

where $\mu t = \rho_1 \mu t_{-1} + p_2 \mu t_{-2} + ... + p_p \mu t\text{-}p + \in t$

One advantage of the LM test is that it takes care of lagged independent variables and it is applied for higher order serial correlation. Nevertheless, Durbin suggested an alternative test called the h-test which is used when one or more lagged dependent variables are present.[25] However, which ever test is used and if the null hypothesis is rejected, corrections for serial correlation is done by the use of quasi-differences to alter the linear model into one in which the errors are independent Pindyck and Rubinfeld (1991, p. 140). This involves transforming the variables as follows:

$$Y_t^* = Y_t - \rho Y_{t-1} \text{ and } X_t^* = X_t - \rho X_{t-1} \text{ where } t = 2,3...N.$$

From that, a regression of Y_t^* on X_t^* is done using the ordinary least squares procedure. But since ρ (the serial correlation coefficient) is not known a priori,

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[24] *The LM test is described by Maddala 1988, pp. 206-7.*

[25] *Durbin suggested an alternative test called the h-test but is still applicable only to AR(1) and used when one or more lagged independent variables are present. See Pindyck and Rubinfield (1991, p.147-149) for details.*

it has to be estimated. The Cochrane-Orcutt procedure is one of the methods that could be adopted to estimate ρ. However, we did not encounter the problem of autocorrelation but where it occurred the models were re-estimated.

The last problem involves the notion of non-stationarity. Many economic time series are clearly non-stationary in the sense that the mean and variance depend on time, and they tend to depart even further from a given value as time goes on (Maddala, 1988). The fact that we are dealing with time series data raises the above problem. The consequence of non stationarity is that one cannot validly model the process via an equation with fixed coefficients that can be estimated from past data (Pindyck and Rubinfeld, 1991, p. 443). One is likely to finish up with a model specified in levels of the series plagued by problems of spurious regression (Adam, 1993, p.25). However, to avoid loss of valuable information as concerns the effects of financial liberalisation considering that the period is still very short (i.e. 1990-1996), the problem of non-stationarity is not considered. Most of the level variables were divided by GDP in order to reduce non-stationarity.

Apart from the various tests described above, other tests employed in this work are the t and F distributions. The t distribution tests the hypotheses concerning the significance of the regression coefficient. More precisely, it verifies whether the null hypothesis of bi = o (where bi is the regression

coefficient) is true. The F test on the other hand generally detects the overall significance of the regression coefficients (or the joint hypothesis that $b_1 = b_2 .... b_k = o$). Finally, to measure the goodness of fit of the regression models, the adjusted $R^2(\overline{R}^2)$ is used. Unlike R^2, the adjusted R^2 takes into consideration the degree of freedom though both are still a measure of the proportion of the variation of the dependent variable explained by the independent variables.

3.5.3 Mathematical Form of Models

Economic theory may or may not indicate the precise mathematical form of a relationship, or the number of equations to be included in the economic model (Koutsoyiannis, 1977). For example, the theories of savings, investment or demand do not determine whether the respective functions should be studied with a single-equation model or with a system of simultaneous equations. Furthermore, economic theory does not say whether the functions should be in linear, non linear or logarithmic forms. Thus in view of the vagueness of economic theory in this respect, it has become a usual practice for econometricians to experiment with various forms and then choose from among the various results the ones that are judged as the most satisfactory on the basis of certain criteria.[26]

[26] Koutsoyiannis (1977) op cit.

Sometimes, equations are estimated in semi-log or log forms to take care of heteroskedasticity problem and in many cases too the choice of the functional form is dictated by other considerations like convenience in interpretation and some economic reasoning (Maddala, 1988, p. 177). For instance, the linear form of a production function given as

$$X = \alpha + \beta_1 L + \beta_2 K \qquad [3.16]$$

Where X is output, L the labour, and K the capital, implies perfect substitutability among the inputs of production. But in log form which is expressed as

$$\text{Log } X = \alpha + \beta_1 \log L + \beta_2 \log K \qquad [3.17]$$

it implies a Cobb-Douglas production function with unit elasticity of substitution. Other examples are the estimation of the demand, savings or real money demand functions. Here the log form is often preferred because it is easy to interpret the coefficients as elasticities[27]. For instance, in the real money function,

$$\text{Log } M = \beta_0 + \beta_1 \log r + \beta_2 \log y + \beta_3 \text{ IPRY} + \beta_4 \log M(-1) \qquad [3.18]$$

where M is real money, y is real GDP, r the real deposit rate and IPRY, private investment, β_1 is interpreted as the elasticity of demand for liquid asset with respect to the real interest rate, whereas β_2 is the income elasticity of demand

[27] *The main objective in this study is not to interpret coefficients as elasticities but to verify if the interest rate policy affects the level of economic growth through the interrelationship between savings and investment.*

for liquid asset. In this work however, the models have been specified in non-logarithmic linear forms except the domestic credit and real money demand functions that are specified in semi-logarithmic forms. This is because whereas most of the variables are expressed as proportion of GDP to mitigate the problems of heteroskelasticity and non stationarity, the former (the values of real money and per capita GDP) were not expressed as proportions of GDP. Thus the need to consider their log forms.

The objective variables of the study have been specified and the next step involves their estimation. The post reform dummy variables which will be introduced in each of the equations to capture the effect of financial reforms will take values of one for the period 1990 to 1996, and zero for the period 1972 to 1989 whereas, the standard deviation of the real deposit rate is calculated from 1970 to period t. Furthermore, the addition of the lagged values as explanatory variables in some of the functions specified above are meant to generally render our model dynamic. This is because the dependent variables often react to a change in one or more explanatory variables only after a lapse of time, and the lagged models have also been found to offer much flexibility to the formulation of models of economic behaviour (Koutsoyiannis, 1977, p. 296). Theory a priori expect variations in these lagged variables and their dependent variables to be positive.

CHAPTER FOUR

ESTIMATION AND ECONOMETRIC RESULTS

4.1 INTRODUCTION

The theoretical propositions in support of the role of financial conditions and other factors in economic development have been outlined in the preceding chapter. This chapter examines empirically to what extent these factors contribute to explaining the growth path of the economy through the observed performance of the efficiency of investment, domestic saving rate, demand for liquid assets, credit availability and private investment. Since part of the work concentrates on the effects of financial reforms or liberalisation, a dummy variable for the reform period (1990 to 1996) is introduced in each of the equations to capture the effects of financial liberalisation. Furthermore, the growth and incremental capital-output ratio equations are to take a spline shape. The area of focus is the effect of interest rates on variables of economic development. Thus, as a point of departure in the analysis of the empirical results, the real rate of interest (r) is included in all our equations specified in chapter three in order to assess the interest rate policy over the entire period.

However, before the regression results are presented it should be understood that many variables do not feature in the estimated equations though they appeared in the model specification. In practice these variables had insignificant coefficients and thus the reported results exclude them from the equations. More surprisingly is the coefficient of the interest rate variable (r) which was very insignificant except in the liquid asset function. For this reason, the notion of linear spline growth and ICOR functions were dropped and alternatively, simple equations re-estimated for them. Thus, the objective variables are insensitive to the interest rate variable and as such reduce the effectiveness of financial liberalisation and the interest rate as policy instruments. Nevertheless, the coefficient of the post-reform dummy are significant in the credit function, private investment, and real money demand functions even though they have not been dropped in the growth and incremental capital output ratio equations where they came out with insignificant coefficients. Each of the models specified above is examined in section 4.2 below.

4.2 REGRESSION RESULTS AND IMPLICATIONS

4.2.1 The Linear Spline Growth Function

The empirical proposition that needed a test as specified in equation (3.7) is that increased real rates of interest through financial liberalisation promotes growth. Economic growth rate is to be regressed on aggregate investment rate (ITY), real deposit rate (r), inflation rate (CPI), terms of trade (TOT), openness of the economy (OPEN), lagged external debt burden DSR(-1), real exchange rate (RER), credit to the private sector CPR and a post-reform dummy (DL).

The results are summarised in Table 4.1 for the linear growth and simple growth equations. Most of the above variables were dropped as their coefficients were very insignificant. The estimated equations as reported in Table 4.1 provide three versions of the results and other variables like domestic savings rate (S), foreign saving to GDP ratio (FS), private investment rate (IPRY) and public investment rate (IPUY) have been introduced in the regressions.

Table 4.1: Parameter estimates for the Growth equations

Variable	(1)	(2)	(3)
C	-0.237[+] (-2.167)	-0.236[+] (-2.156)	-0.236[+] (-2.346)
r	-0.086 (-0.461)	-0.086 (-0.461)	
[4](r-0.01)D	-0.086 (-0.461)		
IPUY	-3.307[+] (-2.834)	-3.307[+] (-2.834)	-3.643* (-4.637)
IPRY	0.179 (0.169)	0.179 (0.169)	
OPEN	0.801[*] (4.281)	0.801[*] (4.281)	0.841[*] 5.502
FS	0.918[+] (2.533)	0.918[+] (2.533)	0.878[+] (2.734)
S	0.860[+] (2.191)	0.860[+] (2.191)	0.976[*] (5.086)
DL	-0.045 (-1.059)	-0.045 (-1.059)	-0.053 (-1.395)
CPR		0.355 (0.909)	0.386[++] (1.857)
$\overline{R}^2$	0.848	0.848	0.864
F	17.863	17.863	26.363
D-W	2.1	2.1	1.97
LM			F(7,18) 0.6432 (0.5386)

Note: t- statistics are in parentheses. LM = lagrange multiplier serial correlation test.

* Significant at the 1 percent level.

\+ Significant at the 5 percent level.

++ Significant at the 10 percent level.

4 (r-0.01) D = See chapter three, section 3.13 for explanation. An equilibrium deposit rate of interest of 0.01 minimised the sum of squared residuals for model (2).

Column (1) shows the estimated linear spline growth with poor results. Output growth rate is not responsive to changes in real deposit rate just like in the model of column (2). The coefficient of real deposit rate is negative indicating that real interest rate impact negatively though insignificantly on output growth rate when the former is below the equilibrium. When the first difference of some independent variables were introduced in the model as observed in appendix II, the deposit rate became a significant factor that influences the growth rate negatively. However, it may be that below the equilibrium rate of interest or during financial repression the negative real interest rates could not attract savings to finance investment and generate growth as advocated by Mckinnon and Shaw (1973). Above the equilibrium represented by (r-0.01)D, the coefficient of real interest rate is also negative and insignificant. Thus the liberalised interest rate is also ineffective.

Both models including that of column (3) portray that the public investment rate crowds out output growth rate and the coefficients are significant at 5 and 1 percent levels respectively. This confirms the fact that public investment had been non productive and tended to crowd out productive private investment. In columns (1) and (2), it is now understood that in Cameroon, private investment has not got any significant effect on output growth rate. Most of the productive part of private investment are crowded out

by public expenditure. Amin (1996b), found out that private investment rate contributes significantly and in some cases insignificantly to growth. However, in appendix II as cited above private investment rate in level became a significant factor influencing economic growth. Nevertheless, most of the variables had insignificant coefficients and when they are excluded from the model, private investment rate just like real deposit rate return to their insignificant levels. The behaviour of private investment cast no doubt. There have been a number of studies into the importance of investment as a generator of growth and results have not been conclusive (Alan and Stuart, 1997). For instance Kuznets (1961) and OCED (1970) found little or no clear relationship between the share of investment in GDP, and output growth rate. The effect of private or aggregate investment on output growth may depend on the measure used.[1] The gross domestic fixed capital includes forms of non-productive investment which are irrelevant to economic growth and does not take any account of variations in the rate at which past investment is `scrapped'[2]. Thus, actual rate of depreciation of capital could be well in excess of official rates due to overvalued exchange rate. In this case the true productive potential of an economy will be less than that implied by official gross or net investment data.

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1 *As Alan and Stuart (1997) noted, "Vittas and Brown (1982) including the OECD (1985) country report on the UK and more recently an occasional paper from the Department of Trade and Industry (1996) reject the use of gross domestic fixed capital formation as an appropriate measure of productive investment."*

2 *Ibid.*

This point could be linked to the formulae we used in calculating the incremental capital-output ratio in section (3.2.1). It indicates that the higher the rate of depreciation (d), the smaller the value of ICOR portraying higher productivity when infact it is due to the overvalued rate of depreciation.

However, in all versions of the growth model, openness of the economy, foreign savings, and domestic savings are positively related to growth. They have a powerful influence on output growth rate with significant coefficients. Pertaining to the estimated growth equations, the behaviour of the post-liberalisation dummy variable does not support the financial liberalisation process in Cameroon. The coefficient is negatively insignificant in all the models, an indication that the financial reform process had not got any impact on output growth rate. This is also observed on the coefficient of above equilibrium interest rates which is a proxy for financial liberalisation in column (1). It is for this reason that the result in column (3) could be preferred though the post-reform dummy has not been dropped. Here the coefficient of credit available to the private sector became significant at the 10 percent level with an improvement in adjusted R^2.

In sum, the growth rate is interest-inelastic both in the simple and spline equations. The equilibrium interest rate is insignificant since the coefficient of the interest rate variable is insignificant. The behaviour of the post-reform

dummy variable also indicates that financial reforms have insignificantly discouraged growth. However, the problem may lie on choice of the interest rate variable as Haque and Layiri (1990) argue. But the result is supported still by descriptive statistic or stylised outcome in Table 2.11 which indicates a fall in the growth rate in the reform period. When the post-reform dummy was replaced by a dummy for uncertainty though result not reported, it behaves quite similarly to the post-reform dummy by negatively influencing output growth rate. But the coefficient was insignificant. Therefore, the decline in output growth rate during the reform period taking into consideration the result of Table 2.11, may be as a result of the decline in openness of the economy, savings rates, credit to the private sector and perhaps deteriorating terms of trade observed in terms of a negative current account balance or foreign savings. This conclusion could be accepted because the above factors contribute significantly and positively to output growth as observed from the empirical results in Table 4.1, but they declined during the reform as shown by the descriptive statistic of Table 2.11.

4.2.2 The Efficiency of Investment Model

The determinants of the efficiency of investment in Cameroon were to be examined by regressing the incremental capital-output ratio (ICOR) on public

investment rate, private investment rate and the real deposit rate assuming a switch at the interest rate variable. However, the coefficients of these explanatory variables were very insignificant thus indicating that neither public nor private investment are efficient and that the real interest rate does not influence the efficiency of investment in Cameroon. Even though the descriptive statistics in Table 2.11 show that ICOR breaks from a relatively low value in the pre-reform period to a relatively high value in the reform era, the interest rate is not responsible for the switch. The conclusion one draws from these results is that no defined relationship exist between real interest and the efficiency with which investment is utilised. In other words the interest rate insignificantly affects the efficiency of investment negatively.

In order to get a better estimate of the ICOR function, we excluded the public and private investment rate from the reported results. We also saw no need of determining an equilibrium rate of interest because the coefficient of interest rate is not significant and when the latter is included in the model as of column (1) in Table 4.2, the error terms are time dependent or serially correlated. The estimated results including other variables which have been suggested to influence the efficiency of investment are presented in Table 4.2 below. These variables are credit to the private sector (CPR), log of real GDP (Ln RGDP), real money balances M (in logform), lagged growth rate GR(-1)

openness of the economy (OPEN), and the post-reform dummy (DL). It was through continuous re-estimation that these variables were retained as they contribute significantly to the overall performance of the regression.

As shown in Table 4.2, credit available to the private sector and real output (in log form) contribute positively to the ICOR function which is an indication that much credit extended to the private sector affects negatively the efficiency of investment. Unfortunately, there are several ways in which financial intermediaries may fail to lead to greater efficiency of investment. While some credit from the informal sector in underdeveloped economies finances expenditure which does not accelerate the rate of economic growth, some is used for financing productive often long-term investment. If these savings are transferred to commercial banks which lend only to credit worthy borrowers for low risk, short-term projects[3], the overall credit allocation may not improve the efficiency of capital in either a static or dynamic sense (Porter, 1980 cited by Abebe, 1990). Indeed, the distribution of credits in Cameroon may prevent many potential borrowers with desirable operations from access to credit because of lack of collateral. More serious is the reluctance of banks to finance agriculture which is the mainstay of third world economies like

[3] *In Cameroon secondary banks give greater importance to short term loans (see Tables 2.6 and 2.7) assumed to satisfy a totally solvent demand.*

Cameroon but concentrates on the granting of loans to town dwellers for consumption purposes.

Table 4.2: Incremental Capital-Output Ratio (ICOR) equations.

Variable	(1)	(2)
C	-0.173 (-0.0038)	1.065 (0.024)
CPR	45.89* (3.659)	46.922* (4.085)
InRGDP	14.354* (3.296)	14.395* (3.403)
InM	-15.923* (-4.798)	-16.068* (-5.061)
GR(-1)	-23.845* (-4.7)	-23.989* (-4.898)
r	1.242 (0.246)	
OPEN	-11.054 (-1.666)	-19.003++ (-1.812)
DL	-1.308 (-0.672)	-1.186 (-0.648)
$\bar{R}^2$	0.848	0.857
F	19.364	23.9
D-W	2.74	2.68

Note: t- statistics are in parentheses
* Significant at the 1 percent level
++ Significant at the 10 percent level
LM Serial correlation

F-	Statistic	1.694794	Probability	0.216967
Obs*	R-Squared	4.43706	Probability	0.109498

The result of real output is not meaningful as it came out with a wrong sign. An increase in real output should depress ICOR and hence improves on efficiency. It may be that what causes output to rise is costly in terms of investment or the rate of increase in investment exceeds that of output.

Real money and lagged growth rate positively impact on efficiency as the coefficients show negative and significant signs with respect to ICOR. The explanation given to the former is that a monetised economy encourages risk-taking and renders production or investment more flexible as opposed to a less monetised or barter economy. The liberalisation of interest rates contributes positively but insignificantly to the efficiency of investment indicated by as the coefficient of the post-reform dummy variable. However, efficiency could improve as ICOR exhibits a declining trend in the later part of the reform process. Therefore, efficiency may be fostered as the reforms become sustainable. The fact that the real money balance influences the efficiency of investment and is also influenced by the real interest rate (see Table 4.4), is an indication that real interest rate could indirectly influence the efficiency of investment.

Finally, the degree of openness of the economy became a significant factor that contribute positively to the efficiency with which investment is utilised only when the interest rate variable was dropped in column (2). The

coefficient is significant at the 10 percent level. This result conforms to the theory of comparative cost advantage where countries are expected to efficiently allocate their resources as they open up to trade. Thus, the decline (rise) in the efficiency of investment (ICOR) respectively during the reform period as observed in Table 2.11 may have been initiated from the decline in the openness of the economy and real money balances or financial intermediation.

4.2.3 Savings Equations

A. Domestic Savings

The factors influencing the savings rates in Cameroon were identified by regressing the ratio of domestic savings to gross domestic product on output growth rate, expost real interest rate on savings deposits, foreign savings relative to GDP, the lagged savings ratio and the post-liberalisation dummy. The estimated equations with model(1) excluding the real interest rate are presented in Table 4.3 below.

The coefficient of real interest rate is insignificant and negative. The conclusion that could be deduced from the above analysis points to the fact that savings are insensitive to interest rate in Cameroon. This is in line with Friend (1963) who concluded that in a developing economies, the net impact of real interest rate movement is either negative or insignificant and also conforms to

Giovannini (1983) and Khathate (1988). However, though the estimated results show that savings rate is interest-inelastic, it is possible that the savings of the populace lured into the financial sector could be motivated by the other factors as expressed in the life-cycle hypothesis such as ability to provide for such things as old age, the education of their children and for unforeseen contingencies. The government policy could also be used to influence savings rate.

In the two equations as shown in column (1) and (2), the post-reform dummy came out with a positive sign in line with the a priori expectation of a positive correlation between savings and financial liberalisation but the t-values are insignificant. As such, interest rate liberalisation have little or mild impact on the savings potential in the country. This result conforms to those of Oshikoya (1992), Ogungbenro et al; (1996) who came out with results that provided mild support for the financial liberalisation hypothesis.

Table 4.3: Estimates of domestic saving rate function

Variable	(1)	(2)
C	0.023 (0.604)	0.0213 (0.582)
r	-0.026 (0.215)	
DL	0.0114 (0.562)	0.118 (0.636)
GR	0.168 (1.7)	0.181+ (2.345)
FS	0.34 (1.342)	0.327 1.363
S(-1)	0.846* (7.223)	0.848* (7.466)
$\overline{R}^2$	0.736	0.746
F	14.382	18.866
D-W	2.24	2.23
LM		F(5,20) 0.5594 (0.5812)

Note: t- statistics are in parentheses.

* Significant at the 1 percent level.

\+ Significant at the 5 percent level.

Another variable that is expected to influence savings rates is the rate of growth of GDP (GR). The variable exhibits the a priori sign and though insignificant in column (1) it became a powerful factor that significantly contribute to savings rates when the real interest rate variable was dropped in column (2). This result is in line with the Keynesian theory that considers rising income or output as the main determinant of savings.

The foreign savings ratio to GDP variable (FS) carries the a priori sign showing that it could contribute positively to the level of domestic savings. Unfortunately, this variable fails to contribute significantly to domestic savings and hence capital formation through out the period of our study. The explanation for this could be that foreign savings is captured by external debt payment or by the government and not well utilised. It may also be due to the inconsistency in the nature of the data on foreign savings ratio. However, our result corresponds to several other studies like Fry (1980), Oshikoya (1992) and Ogungbenro et al., (1996) which found no significant relationship between foreign savings and domestic savings. Finally, in both versions of the savings model, all the lagged values of savings show the expected results both in sign and magnitude and are highly significant at 1 percent. For current savings depends on past savings.

B. Financial Intermediation

Financial repression paradigm postulates that higher real interest rates should increase the amount of savings in banks in terms of deposits. But it is still possible that reforms in the financial sector crowds out real balances. This may be the case where during the reform process, real interest rate appears still low or savers become reluctant to save in banks because of spontaneous closures or restructuring[4] that characterised the early period of liberalisation.

Real money demand equation

$$\ln M = 3.13*9 + 7.111*r + 1.007\ IPRY + 6.193*\ CPI - 0.166*DL + 0.7204*\ \ln M(-1)$$

(4.38) (5.41) (1.21) (5.559) (-3.208) (11.638) [4.1]

$\overline{R}^2 = 0.962$ F = 122.11 S.E. = 0.067 DW = 1.88

LM Serial correlation Test : 1 lags

F - statistic	0.42268	Probability	0.66198
Obs*R-Squared	1.184285	Probability	0.55314

Note: * significant at the 1 percent
t - statistics are in parentheses

The demand for money was examined empirically by regressing real stock of broad money on real interest (deposit) rate, private investment rate, inflation (a proxy for financial instability), lagged value of broad money and the

[4] *Many banks were either liquidated or restructured between 1988 and 1994 in Cameroon (see Table 2.10 and Section 2.4).*

dummy that evaluates the impact of financial liberalisation on financial savings. Real GDP that represents an important factor influencing the standard demand for money as noted by the Keynesian demand for money function was dropped as it came out with an insignificant coefficient.

The estimated result as reported in equation (4.1) above show a positive and statistically significant sign for the real deposit rate during the entire sample period. But during the reform period financial intermediation did not improve as the dummy came out with a negative and significant sign at the 1 percent confidence level. The lack of confidence by depositors as many banks were being liquidated or restructured may have caused interest rate liberalisation not to positively influence financial intermediation. We expected an improvement in financial savings since the interest elasticity of demand for liquid asset is greater than zero in the entire period of study. Secondly, there was financial stability as observed in the coefficient of the consumer price inflation rate which is positive and significant. The fact that inflation is maintained at a low level in the BEAC zone could encourage the populace to hold most of their asset in liquid form without a loss of value. The private investment rate which was introduced in the equation to test the Mckinnon's hypothesis of the complementarity of money and capital has little influence on financial intermediation. According to the result, the real demand for money is positively related to the investment ratio but

the coefficient is insignificant. It may be due to the inability of private investment to contribute to real output or income (see Table 4.1) and on which real money depends according to the Keynesian demand for money function. Commercial banks in Cameroon mostly provide short- term loans, for less risky and non productive projects. For this reason private investment which is unproductive does not contribute to the growth in output leading to no addition in the stock of real money. Thus, money and capital are not complementary in Cameroon as postulated in Mckinnon's hypothesis. But financial intermediation is not seen only in terms of increasing real money balances. It is a process that involves claims on real resources from some individuals or institutions in the community by a financial intermediary and then re-lends these claims to some other individuals or institutions in the community (Padmanabhan, 1996, p.1). This is not the case in Cameroon as observed in the relationship between private sector credit, investment and real deposit rates. The empirical results relating to the investment functions portray that the former are not sensitive to real deposit rate (see equation 4.2 and Tables 4.4). It implies that the banks do not redistribute these funds as they become available to potential investors. There may be some sort of credit directives or rationing and to particularly unproductive short- term projects. Thus, financial intermediation and efficiency in Cameroon has not improved.

4.2.4 The Investment Functions

A. Domestic Credit Function

The empirical proposition to be tested here is that increased real interest rates as a result of financial liberalisation should raise the quantity of investible funds as postulated in the Mckinnon and Shaw (1973) hypothesis.[5] Thus, the credit available to the private sector (CPR) was regressed on several variables including real deposit rate (r) and all were insignificant. But when we carried out a re-estimation, the following variables with significant coefficients were maintained. These were foreign savings to GDP ratio, (FS) terms of trade (TOT), price of capital or central bank discount rate (br), lagged credit ratio CPR(-1) and the post-reform dummy (DL). The estimated results are presented below.

Estimate of Domestic Credit

$$CPR = \underset{(-.275)}{-0.007} \underset{(-3.796)}{-0.037*FS} + \underset{(2.488)}{0.009\ TOT^{+}} + \underset{(1.881)}{0.596^{++}br} + \underset{(9.878)}{0.738*CPR(-1)} \underset{(-3.824)}{-0.059*DL} \quad [4.2]$$

$$\overline{R}^2 = 0.965 \quad F = 128.7 \quad S.E\ 0.0137 \quad DW = 1.71$$

LM Serial Correlation Test

F - Statistic	0.210222	Probability	0.812607
Obs *R-squared	0.614518	Probability	0.735460

Note: t- statistics are in parentheses

[5] *However, we preferred to investigate the credit availability mechanism by evaluating the amount of credit taken by the private sector in response to real deposit rates because private investment is more productive than public capital (see Khan and Reinhard (1990)).*

* Significant at the 1 percent

+ Significant at the 5 percent

++ Significant at the 10 percent.

The result indicates that real deposit rate has no influence on credit stock available to the private sector. Though the price of capital seems to contribute to the credit stock, this might explain the fact that in Cameroon, the availability of funds and not its cost matters. The terms of trade contributes favourably to the level of credit granted to the economy. One could conclude that the decline of credit available to the private sector during the reform period might have been initiated by the deterioration of the terms of trade as observed in Table 2.11. Finally, foreign savings defined as the ratio of current account balance to GDP crowds out the credit stock available in the economy. It may be that the benefits from exports are captured by public expenditure and so crowds out private credit or investment. After having examined how funds becomes available for investment, it is worthwhile investigating the effectiveness of investment in response to the interest rate policy.

B. Private Investment Function

The Mckinnon-Shaw school postulates that raising the real rate of returns on capital makes funds become available and thus raises the quantity of

investment. This situation had been examined in Cameroon by regressing private investment rate on output growth rate (GR), real deposit rate (r), terms of trade (TOT), public investment rate (IPUY), credit to the private sector (CPR), real exchange rate (RER), lagged debt service ratio DSR(-1), price of capital (br or rl) and a post-reform dummy (DL) which was later replaced by a dummy for uncertainty (σ). The result however was poor as most of the variables had insignificant coefficients. These were the real deposit rate, public investment rate, and the real exchange rate that came out with negative coefficients whereas those with positive coefficients were the terms of trade, debt service ratio and the post-reform dummy.

The result presented in Table 4.4 excludes most of the above variables. In column (1), all the variables have insignificant signs except credit available to the private sector which significantly influence investment positively. However, when the real exchange rate and the real interest rate were dropped, output growth rate became an important factor affecting investment as observed in column (2). An indication that the flexible accelerator model works well in Cameroon.

Table 4.4: Estimates of Private Investment Function

Variable	(1)	(2)	(3)
C	0.64*	0.061*	0.082*
	(3.554)	(4.154)	(5.776)
GR	0.0596	0.117*	0.1005*
	(1.653)	(4.456)	(4.2)
CPR	0.336*	0.147++	0.214*
	(4.867)	(1.957)	(4.491)
RER	-0.012		0.044+
	(-0.567)		(2.216)
br		0.653*	0.546*
		(3.078)	(3.589)
r	-0.050		
	(-0.843)		
DL	0.006	-0.0301++	
	(0.418)	(-1.944)	
σ_t			-1.265*
			(-3.832)
$\bar{R}^2$	0.74	0.817	0.872
F	14.66	27.85	33.64
DW	1.58	2.1	2.12
LM		F(5,20) 1.8229(0.1901)	F(6,19)1.131 (0.3458)

Note: t- statistics are in parentheses
* Significant at the 1 percent level
\+ Significant at the 5 percent level
++ Significant at the 10 percent level.

Still in column (2) private investment responded negatively to interest rate liberalisation as the dummy came out with a statistically significant sign. It could be that the lack of business confidence and the distressed situations of commercial banks which are non-quantifiable characteristics of the liberalisation drive, caused investment to deteriorate. More generally, the closure and collapse of some banks and the uncertainty as to the sustainability of the reform

process itself must be taken into consideration. The result in column (3) is preferred to the other two as it tries to quantify the characteristics of the reform when the dummy variable is replaced with the standard deviation of real deposit rate (σ_t). The depressing impact of the post-liberalisation period as shown in column (2) is echoed in model (3) as the coefficient of the dummy for uncertainty is negative and statistically significant at the 1 percent.

The price of capital (br) positively influence investment demand in both model(2) and (3). Nevertheless, it is the Central Bank discount rate which in nominal terms remains relatively lower than the lending rates of financial institutions. The actual price of capital or real lending rate (rl) was included in the regression equation by running data from 1979 and the result is reported in equation (A-II.3) of appendix II. The real deposit and real lending rates show albeit insignificant signs. The surprise here is that whereas the deposit rate negatively influence investment, the real lending rate contributes positively to investment. Since the coefficients are insignificant it implies interest rates do not form the basis of monetary policy in Cameroon and the BEAC zone in general. The existing interest rate structures seem not to respect economic fundamentals. Another conclusion drawn is that in Cameroon credit availability rather than its cost is an obstacle to investment. However, for the coefficient of the real exchange rate which became significant in model(3), one should be cautious

towards its interpretation. It should not be taken as a factor that contribute to investment. This is because the sign is ambiguous as it now appears to positively influence investment. The ambiguity that occurs here conforms to what Felipe and Rodrigo (1993) stipulates, that the effect of exchange rate on aggregate investment is theoretically ambiguous.

4.3 RELIABILITY OF ESTIMATES

When econometric results are to be interpreted, careful attention is needed because the trustworthiness of the estimates are necessary to be checked Koutsoyiannis (1977). Three criteria are used for assessing the results of an econometric analysis. One has been applied and it concerns the a priori economic criteria which are determined by the postulates of the economic theory and relate to the sign and magnitude of the parameters. The second is statistical criteria as determined by the coefficient of determination (R^2), and the related t or F statistics. Finally, we apply a third criterion which is an econometric criterion to judge the 'goodness' of the estimates. This criterion provides evidence about the validity of the linear regression model and concerns test for the presence of heteroskedasticity, autocorrelation and multicollinearity.

The overall performance of the various models is examined by first looking at the measurement of the goodness of fit ($\overline{R}^2$) of the regressions.

$\overline{R}^2$ measures the proportion of the variation in the dependent variable explained by the independent variables. The growth equations in Table 4.1 recorded more than 75 percent, implying that to a greater extent those variables are responsible for the variation in output growth rate. Model (3) in Table (4.1) is highest and this was due to the exclusion of the real interest rate, thus meaning the latter has nothing to do directly with growth. Equally too is the F statistic which tests the existence of a linear relationship between the dependent and the independent variables. They are all significant at the 1 percent with column (3) having the highest in value.

The incremental capital-output ratio or efficiency of investment also recorded more than 75 percent in terms of $\overline{R}^2$ and high F-statistic with model (2) of Table 4.2 best fitting the observed data. For the savings rate, it almost came out with 75 percent, when the real interest rate variable was dropped. F-statistic is equally significant at the 1 percent. The real money demand function is actually explained by most of the changes in the independent variables as it recorded 96 percent in terms of $\overline{R}^2$. This is the case with the domestic credit equation with about 96 percent of the variation in domestic credit caused by the defined explanatory variables. F- statistic was exceptionally high. Finally, the private investment equation also recorded more than 75 percent in the variation of private investment as explained by the independent variables in Table 4.4

with model (3) as the one that best fits the observed data. This happened when the real interest rate variable was left out. It should be understood that, the F-test is used to judge the overall significance of the regression or a test of significance of R^2 (Koutsoyiannis, 1977). As such, when R^2 is high, the F- ratio is equally significant. On the whole the $\overline{R}^2$ indicates that in almost all of our equations, the dependent variables are to a large extent explained by the identified (specified independent variables).

As concerns the last criterion used in assessing the econometric results, more importance was attached to the serial correlation test for reasons explained below. Heteroskedasticity does not usually occur in time-series data (Pindyck and Rubinfeld, 1991). Nevertheless, the white statistic was determined though not presented and the hypothesis of heteroskedasticity was not rejected for the models. The problem of multicollinearity was solved by leaving out irrelevant variables that were not significant and tend to reduce the explanatory power of the regressions results. This resulted to increases in our $\overline{R}^2$. And according to Klein's rule, (Maddala, 1988, p. 226) intercorrelation of variables is considered a problem only if $\overline{R}^2$ is less than the correlation between any explanatory variable and the other explanatory variables. The Durbin-Watson statistics which is the test for the absence of first-order autocorrelation were determined for all the models. But to avoid the problem of higher order autocorrelation and

the fact that some of the lagged dependent variables occurred among the independent variables (i.e. in the savings rate, real money and credit functions), we preferred to apply the Lagrange Multiplier test especially for those models we attached more importance to these are model (3) in Table 4.4, model (2) in Table 4.2 of Table 4.3, the models of equations (4.1) and (4.2) and model (3) of Table 4.4. The relatively low F- values for the L-M serial correlation of which all are insignificant indicates that the errors have no memory. Thus there is data admissibility and the error terms are independently and identically distributed.

4.4 CONCLUSION

The key relations of financial liberalisation theory and interest rates have been investigated in Cameroon. The models hypothesise that the efficiency with which investment is utilised and the growth rate would be positively correlated with above-equilibrium rates and negatively correlated with below-equilibrium interest rates.

However, our empirical analysis portrayed that output growth rate, savings mobilisation and investment allocation as well as efficiency of capital are insensitive to interest rate movements in the country. The econometric results therefore made it impossible for one to assess the level at which interest rate could be detrimental to economic health (i.e. whether the interest rate

should be high or low). As such, the equilibrium real interest rates determined in the model of Table 4.1 has no significant implication. Nevertheless in appendix I, it is observed that during the reform period except in 1994 and 1995, interest rates were held above equilibrium and below it during the pre-reform era but has no effect on growth rate nor efficiency of investment. With the reforms in the financial sector, the impact of interest rates on savings, output growth and on the efficiency in the allocation of capital have been mild. The interest rate policy remains insignificant just like in the pre-reform period. Nevertheless, the real stock of broad money or financial savings is interest elastic but the liberalisation of interest rates impact negatively on it. The lack of confidence which clouded the banking sector may have caused the decline in financial savings.

Moreover, there is evidence of an autonomous downward shift in the investment function during the reform period. This downward shift may be related to a general lack of confidence in the new system or specifically to a greater relative price uncertainty during the liberalisation period. It can also be that in the liberalisation period the quantity of credit available to the private sector may have been too low from the stand point of fostering investment and growth. Furthermore, concerning the decline in investment, the uncertainty and macroeconomic instability that characterises the reform period as measured by

the dummy for uncertainty might have been aggravated by shocks like adverse terms of trade, external debt burden, fiscal deficits and the decline in openness during that period as also observed in Table 2.11. These variables however insignificantly affected investment during the entire period of study.

Pertaining to the other determinants of economic growth, efficiency of investment, savings rate, financial savings and investment functions, the underlying factors were identified. As concerns the economic growth rate, openness of the economy, foreign savings and credit stock to the economy were its contributing factors. The fact that credit to the private sector has a salutary effect on output growth rate may be that during the entire period of study, fiscal discipline prevailed in Cameroon which crowded in productive private investment.

Concerning the efficiency in the utilisation of capital, real money balances and a more opened economy could positively improve it. Furthermore, economic depression in terms of lagged growth rate could also impact negatively on efficiency. It was also found that credit to the private sector, real exchange rate and the level of output growth rate are important determinants of private investment in a positive sense. However, the real exchange rate variable is ambiguous, since it obtained a positive and significant coefficient except when the interest rate variable was dropped and the post-reform dummy

replaced by a dummy for uncertainty. Finally, one cannot validly accept that the real interest rate is economically insignificant. This is because when the first difference of some explanatory variables were considered (see appendix II), the real interest (deposit) rate appears to significantly influence output growth rate and investment though negatively. However, most of the other variables had insignificant effects and when they were dropped the real interest rate returned to its insignificant level. It may be that, the effect of real interest rates on those variables occur rather indirectly through other mechanisms.

GENERAL CONCLUSION

1. SUMMARY OF FINDINGS

The main objective of this study was to find out if the interest rates and financial reforms have any impact on economic growth. The mechanism was presumed to occur through increased savings and investment and improved efficiency in the allocation of capital. However, before we present the summary of the results it is necessary to briefly state the difficulties encountered during the study so that our results and conclusions/policy recommendations be interpreted within this context.

These problems commenced from the inability to obtain an interest (deposit) rate that is representative of the economy, consistent data, the use of proxies which implicitly admit measurement errors and the lack of appropriate variables. Another serious obstacle was the impossibility to carry out sub-period estimates for the reform period which still has a short time-series data and the absence of quarterly data. Thus, we had to use dummy variables as a proxy for the interest rate liberalisation plagued by the impossibility of determining the time-series properties of the variables or testing for non-stationarity. All these might have also led to measurement errors.

As observed, there are several short comings in this study and one is cautious of the fact that this may have affected the results of the study. However, we are hoping that the descriptive statistics which compared the

indicators of financial sector development under a liberalised and repressed environments together with the quantitative analysis have improved the quality of the results. These are all mathematical tools which rely very much on assumptions and even a study which may not encounter the limitations mentioned above still uses mathematical techniques. These techniques are based on assumptions. And as we know neither theory or its assumptions are realistic. Friedman (cited by Maddala 1988, p. 3) noted "... the relevant question to ask about the assumptions of a theory is not whether they are descriptively 'realistic' for they never are, but whether they are sufficiently good approximations for the purpose at hand. And this question can be answered by only seeing whether theory works, which means whether it yields sufficiently accurate predictions". With the foregoing statements in mind, a presentation of the findings could now be done.

The reforms in the financial sector of Cameroon were undertaken under a severe macro-economic instability and widespread financial distress. Most of its banks were technically bankrupt in the late 80s and this situation was compounded with liquidity problems, mounting non performing assets and undercapitalisation that threatened the success of the programme. However, the reform began with frequent adjustments of interest rates taking into consideration market forces; elimination of preferential rates (or relaxation of

requirements that banks lend to priority sector of the economy); recapitalisation of banks; rehabilitation of insurance companies and the strengthening of prudential regulation, bank supervision and control. After all these measures and for almost a decade, the positive expectations of financial reforms in Cameroon have not yet been realised.

The financial sector is still underdeveloped. The ratio of financial assets to GDP is shallow, with the ratio of broad money to GDP, M2/GDP, averaging 0.20 and even lower during the reform period. This is an indication that the banking network is poorly represented through out the country and it appears the financial system is still relatively dominated by the central bank. The ratio of central bank liabilities in the form of reserve money (currency in circulation plus bank reserves) to M2 barely decline from 28.9 percent in the pre-reform to 25.8 percent in the reform era and secondly the reserve ratio is relatively high in the reform than in the pre-reform era.[1] However, bank reserves to bank deposits which averaged 4.8 percent is relatively lower in Cameroon and the BEAC zone in general.[2] As concerns results of the reform, though no benefits have been felt on financial intermediation and the structure of the financial sector, nevertheless some positive response could be cited. Real interest rates became

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[1] *Fry Maxwell J. et al., (1996) found out that bank reserves to bank deposits in some developing countries stood at an average of 28 percent as compared to 5.7 percent for some OECD countries. They concluded that central banks of developing countries dominate their financial systems because of relatively high reserve money to M2 and high reserve ratio.*

[2] *The low ratio may reflect the high demand for CFA wich makes it difficult for monetary authorities to monitor bank reserves and implement monetary policy (Njinkeu, 1997).*

positive and there is an improvement in the efficiency of financial intermediation as measured by the decline in the ratio of reserve money to deposits which moved from 41.7 to 31.6 percent. The interest rate policy is yet ineffective after the reforms.

The responsiveness of savings to real interest rate, the following results were obtained. The real stock of money demand or financial savings is significantly determined by the real interest rate. But it appears financial liberalisation impact negatively on real balances or financial intermediation. This might have occurred as a result of the general lack of confidence in the new system specifically in the banking sector. On the savings rate, it is now known that savings potentials exist at least in the Cameroon economy as the marginal propensity to save exceeds to a little extent the average propensity to save. However, this savings rate is not responsive to the real interest rate but highly depends on income growth. This may explain why after the financial sector was liberalised and real interest rate became positive, the level of domestic savings slightly responded to the real interest rate. Nevertheless, it appears the real deposit rate is still low though positive and given the low income level and by implication high marginal propensity to consume, the former may not necessarily raise savings level in Cameroon. Thus, the income effect dominates the substitution effect of a price change. This is a serious

problem because the country has to rely on external sources to increase capital formation or eliminates its savings gap.

Even though, real interest rates became positive after liberalisation, there is yet an improvement in the allocation of financial resources. Domestic credit or bank credit to the private sector does not responds to the real deposit rate as expected. The latter has also got no effect on private investment which is interest inelastic. The reason advanced here is that the banking system is still inefficient. Since financial savings responds to real interest rate, there is a clear indication that funds are always available in banks. Thus the positive link between higher financial savings and growth may largely depend on how the transformation of resources into investment takes place within the financial sector. The suggestion is that in Cameroon the available funds in banks are not effectively redistributed to potential investors. More precisely, bank credit to the private sector are allocated based on non-economic factors and interest rates do not fully reflect economic fundamentals. Another possible reason may be due to the emphasis placed on lending to consumers or the concentration on short-term lending which are non-productive. Thus, little share of funds are provided for long-term risky and productive projects (see Tables 2.6 and 2.7).

During the liberalisation period, investment was negatively affected and this appeared to have occurred as a result of the decline in credit availability

rather than the relatively high cost of credit or real lending rate which does not influence investment. Nevertheless, there was severe macroeconomic instability and uncertainty observed in terms of internal and external shocks. Thus, private investment appears to have been affected by non financial factors such as structural reforms or shocks like adverse terms of trade, fiscal imbalances and the external debt burden (which are proxies for uncertainty).

The impact of real interest rate and financial sector reform on the efficiency with which investment is utilised, and on output growth rate remains inconclusive. As measured by the incremental capital-output ratio (ICOR), the efficiency of investment has been relatively high during the pre-reform period with ICOR averaging 2.5 between 1972 and 1989 and moved up to 6.9 in 1990 and later dropped to 0.9 in 1996 in the reform period. As observed, there was improvement in efficiency in the later part of the reforms, perhaps as a result of improving financial intermediation caused by the devaluation of the CFA in January 1994 or due to an understanding of the reform process by the populace.

As concerns real GDP growth, it averaged 4.7 percent and 0.45 percent during the pre-reform and reform periods respectively. Nevertheless, it appears these variables are yet to be influenced by the real interest rate nor financial liberalisation. As such it was impossible to determine whether the interest rate policy may be a powerful tool in such a way that setting it too high may be as

detrimental to economic health as setting them too low. However, the equilibrium real rate of interest in the growth equation in Table 4.1 given as 0.01 or 1 percent portrays that most of the setting during the reform period were above the equilibrium. The effects of real interest rate on investment and thus growth may occur indirectly since it significantly and in some cases insignificantly appears to influence investment and growth negatively. However it was realised that for the efficiency of capital to be improved and growth enhanced, the economy should be more opened, for open economies are expected to allocate resources based on comparative advantage; adequate credit stock should be made available to the private sector and unproductive public investments cut down. Furthermore, private investment in Cameroon appears to be unproductive and so does not contribute to growth. Nevertheless, the high level of (decline in) private fixed investment during the pre-reform (reform) periods were accompanied by stronger (poor) growth performances respectively (see Table 2.11 and appendix II).

In a nutshell, one can logically conclude that positive real interest rates are necessary but not sufficient conditions for increased savings mobilisation, increased investment and improved growth performance through an efficient allocation of capital. Economic theory suggests a positive correlation between savings, investment and a rising real deposit rate, particularly in the immediate

post financial repression era. However, from our findings and from other studies in some developing countries, such expectations are not met. Macroeconomic instability and uncertainty have been suggested as responsible for this failure. But other factors seem to play a significant role in the growth process although the extent of these factors can only be ascertained from a thorough empirical study. Nevertheless, it would be erroneous to ignore their influence. However, despite the above short comings, it is now understood that positive real interest rates may tend to make savers favour financial than non-financial forms of savings considering that in Cameroon the real stock of broad money is interest elastic. The new interest rate policy or financial reform is yet to succeed just like the failure of the old policy. Nevertheless, hopes exist in future since savings and the efficiency of investment slightly responded to the reform.

2. POLICY RECOMMENDATIONS

From the above, some policy recommendations could be made. Cameroon and other BEAC member states have made some progress since a decade ago towards establishing a sound and efficient banking system. However, the financial sector still falls short of achieving the dynamism and efficiency of a full-fledged market based financial system. This seems to reflect the fact that some of the key reform measures are still to be implemented or

were introduced only recently and have not yet produced their full impact. Thus, though most of the necessary legal and regulatory reforms are now in place the challenge still facing the authorities concerned is the inability to have the financial system reflect the principles of market mechanisms or competition.

For instance, in Cameroon the state was still playing a formidable role as of June 1994 (though not as a major shareholder) when all private agents are lumped together, with about 85.6 percent of shares in non-commercial banking sector and 40.1 percent in commercial banks (Njinkeu, 1997). The interest rates charged in the sub-region are economically insignificant and the reforms in the financial sector are yet to be beneficial. With the critical importance of savings, investment and efficiency of investment in the growth process, the authorities should ensure the following for future success in the interest rate policy.

First, borrowing and lending should take place at substantial real rates of interest which requires that government participation in banks and the taxation of the financial sector be kept at very low levels. Furthermore, increased competition could be encouraged through financial openness. Domestic financial institutions may tie up with international financial markets where residents are allowed to borrow freely from the latter and non-residents to invest freely in domestic markets. However, this requires a modification of the investment code to suit the situation. Finally, within the sphere of external

liberalisation or financial openness, domestic transactions in foreign currencies (such as bank deposit and lending in foreign currencies) could be encouraged. With the creation of interbank foreign exchange, management of foreign exchange is decentralise and market forces are allowed to play a greater role in real exchange rate determination.

Secondly, in order to improve on the ongoing financial reforms, long-term instruments of credit toward the financing of private investment be promoted. This will help improve the efficiency of investment in the region where most credits are short-term and mostly for consumption purposes which are not productive. This measure should be enforced by the creation of a Deposit insurance corporation or scheme to induce more savers. Since savings potential exist in the country and the liberalisation of interest rate slightly improve it, national savings could be encouraged by introducing other instruments such as certificate of deposits coupled with large savings campaigns. However, plans are still underway for the creation of Deposits guarantee fund and there are hopes for an ultimately efficient financial market if this measure together with plans of creating and Inter-bank guarantee fund and a stock exchange market are implemented.

Thirdly, prudential regulations should be strengthened. This involves a specification of stricter rules on how to make provisions for non-performing

loans. A loan recovery company exists in the country but it appears the rules governing its functioning are not effective. The reform of the law enforcement and judicial system coupled with the presence of a stock market could help facilitate loan recovery procedures by ways of court and on purely market principles. A conversion of the non-performing loans in the banking system into debt instruments that can be resold in the stock exchange means the proceeds could be used to off-set the non-performing loans or clean the balance sheets of banks. Further, a country which relies heavily on the banking sector for the financing of its deficits could have its debts converted into debt instruments on the stock market. The amount of credit to the government will substantially reduce and funds released to the private sector. This will be reflected in an improvement in financial intermediation. However, the development of a stock exchange which may also give birth to equity markets and risk taking requires greater liquidity and transparency. An acceleration of the privatisation procedure which lessens government participation in economic activities is important to this end. The commercial banks and non-bank financial institutions would be able to bear risk by financing long-term projects.

The policy option of financial reforms should not be done without concern to the semi-formal and informal financial units. The latter are also sources of domestic financing especially in the rural world in economies like

those of the BEAC sub-region that heavily rely on agriculture or the informal sector. The recent decree of the Prime Minister of Cameroon that submits savings and credit co-operatives to banking rules and regulation is a good step. This will guarantee security and confidence in the sector and encourage the development of savings schemes in the country, making more funds available for the rural world and to potential small and medium size enterprises. However, specific legislation is also required for informal financial operators. This unit should be encouraged to form associations or other groups capable of securing transferable and discountable collateral for their loans. Finally, a clear-cut line on the rules governing credit co-operatives should be defined to avoid competition between commercial banks and savings and credit co-operatives as both are now under the control of the monetary authorities and COBAC.

Finally, in order to successfully implement the above recommendations, macroeconomic stability and certainty should be guaranteed. This requires monetary and fiscal discipline and appropriate real exchange rate coupled with political stability. However, concerning the interest rate policy there is need for policy makers to reconsider the existing structure of interest rates as they are economically insignificant. The role of financial institutions rather than the interest rate per se is of paramount importance in financing economic activities and growth in the BEAC region. Thus, further research is encouraged to

investigate the determination of interest rates across financial institutions and on the aspect of interest rate setting as more data becomes available especially on the different components of private investment. The principle of interest rate determination requires a knowledge of the country specific institutional arrangements and financial market conditions. Thus, a country belonging to an economic integration unit like Cameroon of the UDEAC or BEAC zone must autonomously determine its interest rates. A re-orientation of the financial segments of the economy should be done with reference to the socio-economic environment of the specific country. However, for the time being minimum real deposit rates could be linked to or placed above the central bank discount rate which in nominal terms favourably affects credit to the private sector and investment. In addition, a widespread between deposit and lending rates should be avoided.

APPENDIX I

Table A-I.1: Some interest rates practised by Financial Institutions in Cameroon.

Year	3 - 6 months time deposit	Savings deposit	Postal Savings		Lending rate of Commercial Banks		Central bank discount rates
			nominal	Real	nominal	real*	
1972	n.a.	n.a.	3.5	-4.3	n.a.	n.a.	4.5
1973	n.a.	n.a.	3.5	-6.3	n.a.	n.a.	4.5
1974	n.a.	n.a.	4.5	-10.8	n.a.	n.a.	4.5
1975	n.a.	n.a.	5.5	-7.1	n.a.	n.a.	4.5
1976	n.a.	n.a.	6.5	-3.1	n.a.	n.a.	5.5
1977	n.a.	n.a.	7.25	-6.5	n.a.	n.a.	5.5
1978	n.a.	n.a.	7	-4.9	n.a.	n.a.	6.5
1979	n.a.	6.25	7	0.4	6.5	-.09	6.5
1980	3.5	7.5	6.5	-2.8	7.5	-1.9	6.5
1981	3.5 - 5.75	7.5	7.5	-2.9	13	2.1	8.5
1982	3.5 - 5.75	7.5	7.5	-5.1	13	-0.3	8.5
1983	3.5 - 11	7.5	7.5	-7.8	14.5	1.8	8.5
1984	3.5 - 11	7.5	7.5	-3.5	14.5	2.8	8.5
1985	3.5 - 11	7.5	7.5	-0.9	14.5	5.5	8.5
1986	3.5 10.5	7.25	7.5	-0.3	13.5	5.3	8.5
1987	3 - 10	7	7.25	-5.2	13	-0.08	9
1988	3.25 - 6.75	7.5	7.04	5.3	13.46	11.6	8
1989	7.5	8	8	9.9	15	16.9	8
1990	min. 7.5	8	8	6.8	18.5	17.2	10
1991	min. 7.5	8	8	7.9	18.15	18	11
1992	min. 7.5	8	8	8.1	17.77	17.9	10.75
1993	min. 7.25	8	8	11.6	17.46	21.3	12
1994	min. 5.5	8	8	-0.2	17.5	14.8	11.5
1995	min. 5.5	6	8	-6.1	16	1.8	7.8
1996	min. 5.5	6	8	0.18	22	14.2	8.6

Source: BEAC, Etudes et statistiques, postal office savings bank, Yaounde

Note:
n.a. = not available

* = real interest calculated from equation (1.1) of chapter one.

Appendix II

Growth equation (GR)

$$GR = -0.532 + 0.959\ OPEN - 0.325\ CPR + 1.489IPUY + 1.92IPRY + 0.057DL \quad [A\text{-}II.1]$$
$$(-2.91)\ (3.54) \qquad (1.84)$$

$$+ 0.477dRER - 0.017dTOT - 0.718dCPI - 0.187\ dDSR(-1) - 0.768r$$
$$(-2.33) \qquad (-2.22)$$

$\bar{R}^2 = 0.735$ S.E of regression = 0.0593 DW = 1.6

F - statistic 7.1
LM serial correlation Test:
F - statistic 0.46577 probability 0.637033
Obs*R-squared 1.559704 probability 0.45847
Note: t-statistics are in parenthesis and are significant at the 10 percent level.

Private investment equation (IPRY)

$$IPRY = 0.052 + 0.395CPR + 0.104\ IPUY + 0.019DL \quad [A\text{-}II.2]$$
$$(2.02) \quad (4.58)$$

$$-0.022dRER + 0.003dTOT + 0.084dDSR(-1) - 0.0146r$$
$$(-2.45)$$

$\bar{R}^2 = 0.699$ S.E. of regression = 0.0152 DW = 1.6 F - statistics 8.3

LM serial correlation Test:

F - statistics	0.64540	probability	0.54457
Obs* R-squared	2.07746	probability	0.353902

Note: The coefficient of real interest is significant at 10 percent.

Private Investment equation (IPRY)

$$IPRY = 0.205 + 0.034GR + 0.02CPR + 0.002TOT - 0.112r \quad [A\text{-}II.3]$$
$$(3.72)$$

$$+ 0.018rl - 1.33\sigma t - 0.07DSR(-1)$$
$$(-1.78)$$

$\bar{R}^2 = 0.876$ S.E of regression = 0.014 DW = 1.98 F-statistic 10.11

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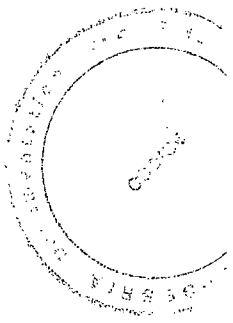

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