

**The Impact of Interest Rates on  
Demand for Credit and Loan  
Repayment by the Poor and  
SMEs in Ghana.**

Edwin Amonoo  
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August 2003

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# **THE IMPACT OF INTEREST RATES ON DEMAND FOR CREDIT AND LOAN REPAYMENT BY THE POOR AND SMEs IN GHANA**

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August 2003

## **Abstract**

The goal of this study is to establish whether there is a relationship between interest rates and the demand for credit as well as interest rates and loan repayment by the poor and the SMEs in a rural region of Ghana. If it exists, what is it? The starting framework is the financial sector liberalisation hypothesis of McKinnon and Shaw, augmented with information asymmetry. The results show a negative relationship between interest rates and the demand for credit. There is also evidence of a negative relationship between interest rates and loan repayment. Hence, lowering interest rates would increase the poor and SMEs' demand for credit and loan repayment at banks and non-bank institutions. To do so, fiscal policy by the government should be amended.

**JEL Classification Numbers:** O16; O17; O55

**Keywords:** Credit Demand, Loan Repayment, Interest Rates.

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## Executive Summary

The study's main objective was to find out whether interest rates influence the demand for credit by the poor, small and medium scale enterprises in the Central Region of Ghana. Additionally, this study verified whether a relationship exists between interest rates and loan repayment by the Poor and the SMEs. The methodology took into consideration the McKinnon-Shaw hypothesis which states that nominal and real interest rates would increase with the adoption of financial sector liberalisation and this would promote savings mobilization and make credit readily available to borrowers. Another aspect of the methodology included the Stiglitz-Weiss information asymmetry model, which revealed that higher interest rates bring about adverse selection and moral hazard.

The procedure used to satisfy the objectives consists of the formulation of two simple models which capture the following:

1. The impact of higher interest rates on the demand for credit
2. The impact of higher interest rates on loan repayment.

The data design covered 11 out of the 12 districts in the Central Region. The sampling frame for the banking and non-banking institutions is the total enumeration of the population. Purposive sampling method was employed in the selection of the SMEs. Fifty small and medium scale enterprises spread over the 11 districts were interviewed. The banking and non-banking institutions were 25 in number. The main thrust of the interview with the banking institutions was to find out whether interest rates affect loan recovery performance. Additionally, the importance which banking and non-banking institutions attach to the granting of loans to the SMEs was ascertained. The banking and non-banking institutions mentioned that treasury bills, inflationary rate, risk and type of economic activity were the determinants of interest rates. The interview schedule with the SMEs encompassed data on interest paid on loans, annual profit and owner's equity.

Regression analysis based on ordinary least squares procedure was used to establish the relationship between demand for credit and interest rate. Logit Model was employed to estimate the relationship between loan repayment and interest rate. Simple tables were also used to summarise some of the responses obtained from the fieldwork.

The study results envelope the following:

- (i) The SMEs are involved in various economic activities for example, food processing, wood and metalwork, salt mining, dressmaking, oil extraction and soap manufacturing. They operate in the informal sector with small capital. Their production isoquants are simple and labour biased. They do not use information as vital resource in programming and planning. Some of them are engaged in forward and backward vertical integration of activities, for example, enterprises engaged in oil extraction manufacture soap, and dressmaking businesses undertake batik production.
- (ii) The lending policy of the lending institutions does not seem to give much weight to the SMEs due to several factors – preference for high yield risk-free treasury bills.

- (iii) The rural/community banks have de-emphasised collateral security as a condition for the granting of loans. Their preference is personal guarantor and peer leverage through group dynamics. Insistence of collateral by the commercial banks disqualifies most SMEs.
- (iv) The average interest rate charged by the banks was about 45% per annum. A non-banking institution for example, the National Board for Small Scale Industries (NBSSI) charges 20% interest rate due to their sources of funding which is Government and External Support Agencies (ESAs).
- (v) The study shows how the interplay of interest rate, annual profit and owner's equity affect the demand for credit by the poor and SMEs. The results indicate that there is a negative relationship between interest rate and the demand for loans. The analysis demonstrates that owner's contribution to capital, to a large extent determines the weight which the lending institutions attach to granting loans to SMEs. It can be inferred that enterprises with more financial resources are likely to be considered for loans.
- (vi) The causes of poor loan recovery as revealed by the banking and non-banking institutions are high interest rates, poor appraisal and weak monitoring, late disbursement of loans and the negative attitude towards loans. The high interest rate of about 45% affects the ability of the poor and SMEs to service fully their loans. It heightens the incidence of default and constrains the lending institutions' ability to advance loans to the SMEs. The SMEs also mentioned the absence of ready market for their products and alluded to the reduction in the amount applied for and low profit levels as some of the causes of poor loan recovery.

The present study advocates the reduction of interest rate to about 20% in order to make loans affordable to and repayable by the poor and SMEs.

## 1. Introduction

The debate on whether there has been a higher interest rate is better appreciated by looking at the context in which interest rate is defined and the trend of interest rate in the financial and economic crisis period of the 1970s through to early 1980s and the period of economic reforms. There are different interest rates, namely, lending/borrowing, deposit rate, bank rates among others. For the purposes of this study, the focus is on the lending rate since we will examine the relationship between interest rate and demand for credit on one hand and interest rate and loan repayment on the other.

The financial and economic crisis period in Ghana was characterized by negative real interest rates due to excessive government borrowing and the government's refusal to adjust the nominal interest rate. The expansionary monetary policy as evidenced by the growth of money stock which was over 40% by 1983, coupled with adverse supply shocks forced the rate of inflation to increase, reaching its peak of 123% in 1983. This left the real lending rate negative. For example, the real lending rate went as low as -108.3% in 1983 (IMF, International Financial Statistics, 1990). The negative real interest rate did not encourage savings mobilization. Supply of funds was not adequate for investment. This situation was worsened by government's excessive borrowing which crowded out the private sector, especially the Small and Medium Scale Enterprises (SMEs).

Economic reforms were embarked upon in Ghana from the middle of 1983 as a response to the crisis. One of the integral components of the reforms was the liberalisation of the financial sector including interest rate deregulation in 1988, which was based on the theoretical framework of McKinnon (1973) and Shaw (1973). The McKinnon-Shaw

hypothesis shows that a low real interest rate is a disincentive to savings, thereby reducing the availability of credit. The main policy prescription of the McKinnon-Shaw hypothesis is that the financial sector should be liberalised for interest rate to be determined by the interplay of demand and supply. In the process, nominal and real interest rate will increase savings mobilization. The McKinnon-Shaw hypothesis was criticized by Stiglitz and Weiss (1981) and Besley (1994) who are of the view that interest rates cannot function as an allocator of credit because borrowers with higher risk may be considered rather than those with potential good business with lower risks. This occurs because of market failure brought about by information asymmetry.

Recent developments in the financial sector have shown that the Financial Sector Liberalisation (FSL) has exacerbated the high interest rates and the urban bias of banks – concentration of banks in urban centres. For example, the Minister of Finance, Ghana, recently remarked that the Government of Ghana views with concern the high cost of borrowing and lending in the banking system. According to him, this phenomenon does not augur well for private sector development. The spread between the lending and borrowing rates of 20% points is a disincentive to business (Salia, 2001).

The collapse of small and medium enterprises – pillars upon which the national economy anchors – is a matter of great concern. The displacement of labour, loss of incomes and trends in enterprise-failure contribute to the weakening of the economy and high incidence of poverty. It is estimated that about 40% of Ghanaians are below the poverty threshold (Ghana Living Standard Survey, Fourth Round, 2000). This state of affairs calls for in-depth study of the relationship between high interest rate on one hand and demand for credit and loan repayment on the other which provides ingredients and

mechanism for possible shift in policy paradigm. Apart from the collapse of small and medium enterprises, banking institutions have shown signs of fatigue. The three major commercial banks (Standard Chartered Bank, Barclays Bank Ghana Ltd and Ghana Commercial Bank) have closed some of their branches in the country in pursuit of financial rationalization. This rationalization shows the de-segmentation of the activities of commercial banks albeit the creation of new commercial banks. Since 1988, nine new commercial banks have been established and these are concentrated in the capital city, Accra. This phenomenon tends to crowd-out SMEs from the financial market.

As part of efforts to minimise credit constraints, past and present governments have sponsored a lot of programmes funded through banking and non-banking institutions. Some of the non-banking institutions that have been established to promote the development of small and micro-enterprises in the Central Region are National Board for Small Scale Industries (NBSSI); Central Region Development Commission (CEDECOM); EMPRETEC (*Empresas Technologicas*) Ghana Foundation; and District Assemblies – Poverty Alleviation Fund (PAF). Interest rates were pegged at 20% by these non-banking institutions as compared with an average market rate of 45%. This was to satisfy the demand of the SMEs. Although interest rates were low, loan recovery rate has not been satisfactory. Loans granted under the PAF in 1999 have up to 2001 not been fully paid back (Agbelie, 2001 and Seini, 2001). This is close to moral hazard outcome of Stiglitz and Weiss (1981).

The economic reforms embarked upon by the Government of Ghana since 1983 have contributed to a high interest rate and this is affecting the demand for credit by the Poor and SMEs. Additionally, the high interest rate is assumed to be affecting the

repayment of loans and the general performance of SMEs. The problem statement could be formulated in the form of research questions. Do high interest rates alone influence the demand for loans by the Poor and SMEs? How do high interest rates affect the repayment of loans by the Poor and SMEs? Based on these questions, the study examines the extent to which interest rates affect the demand for credit and loan recovery performance; investigates the weight the banking institutions give to SMEs in their lending policy; and discusses possible paradigm shift and related policy implications.

This study has ‘built-in fence’ that separates part of the problem which normally might be considered as an integral aspect of the study. Lack of time and non-availability of data delimited the study. This study did not include the issue of the equilibrium interest rate for the Ghanaian economy, although its importance is underscored. The nature of every research situation can limit its generalizations. The limitations were of different types. Firstly, the use of purposive sampling rather than a random sampling restricts generalisations of the study. At best, the outcome can be generalized to only the survey area. Secondly, the degree of reliability of responses due to memory lapses could affect the precision of the outcome. Additionally, biases introduced by several interviewers could also not be estimated. However, the study will contribute to the closing of the knowledge gap. For example, it will throw light on whether the credit crunch afflicting many SMEs has been exacerbated by the recent reforms in the financial sector including interest rate deregulation and abrogation of preferential credit allocation to specific sectors.

The rest of the study is structured as follows: the relevant literature is reviewed in the second section; the third section dwells on the methodology whilst the description of the result and its interpretation is captured in the fourth section; the shift in policy paradigm

is also discussed in the fourth section; and the fifth section covers the conclusion of the study.

## **2. Literature Review**

This section of the study examines the current state-of-the-art in order to help formulate a methodology and help compare the results of the present study with earlier ones.

### **2.1 *The Definition of SMEs***

There are various definitions used to typify SMEs. According to Bock (1989), Georgia Institute of Technology alone has more than fifty definitions for SMEs. The International Labour Organisation (ILO) gives a broad meaning which includes modern industrial firms employing up to 50 employees, family units employing 3 to 4 people, cottage industries, group companies and small self-employed firms in the informal sector of the economy (Lassort and Clavier, 1989).

In Ghana, the most important criterion used in defining the size of enterprises is employment (Boon, 1989). The Ministry of Local Government and Rural Development (Ghana) considers any establishment that employs 1 to 9 employees as a small-scale enterprise, 10 to 20 employees as a medium-scale enterprise, and above 20 employees as a large-scale enterprise. The NBSSI defines small-scale industries as production units that are engaged primarily in manufacturing outside the residence, with an investment and tools of not less than 10 million cedis and which engage less than nine people (NBSSI, Annual Report, 1997). It is to be noted that some of these definitions vary according to number of

employees, level of investment, total assets and turnover. From the foregoing, it can be discerned that there is no consensus on the issue of the definition of SMEs. Given changes in the value of the domestic currency, heterogeneity of assets and variations in turnovers, using these factors to differentiate scale of operations of enterprises does not seem very appropriate. For these reasons, this study adopts the definition of SMEs based on the number of employees ranging between one and twenty.

## **2.2     *The Theoretical Paradigms of Financial Market Liberalisation***

In the theoretical literature, two main positions have been advanced regarding the malfunctioning of the financial markets in the developing economies. The two main explanations are anchored on policy induced outcomes and structural and institutional outcomes (Aryeetey *et al*, 1997). The financial repression hypothesis of McKinnon (1973) and Shaw (1973) attributes outcomes to government policy failures. These policies placed ceilings on deposit and lending rates which fuel the demand for credit and reduce credit supply. In such credit supply situations, rationing through means other than the interest rate was embarked upon by the suppliers of credit. These resulted in a fragmented market which favoured a limited number of borrowers that have connections with banking officials. The majority of loan seekers' demand could not be satisfied through the formal or semi-formal financial system. These groups have no choice but to borrow from informal credit market with high interest rates.

The model which addresses policy induced-bottlenecks leading to market failure stipulates that the removal of restrictive financial policies will lead to even-keel expansion of the formal credit system which will crowd out the inefficient informal sector. It was also expected that the model will reduce the spread of borrowing and lending rates and will

enhance the flow of funds between all segments in the financial system. Ex-ante credit seekers like the Poor and SMEs who were marginalized under the repressive financial system will now have access to credit. Another expected outcome was that depositors will shift from short-term to interest bearing longer-term deposits.

Another theoretical paradigm of financial market is that of Stiglitz and Weiss (1981). This theory of credit market postulates asymmetrical information as the cause of poor workings of the financial market in developing countries. The imperfect information unleashes two outcomes, namely, adverse selection and moral hazards. Two main features of the model can be formulated as follows: lenders allocate monies to projects which are risky and may not be bankable; and credits are given out at the cost which is equal to the opportunity cost of funds, for example, the supply price paid to savings or fixed depositors (Besley, 1994).

Adverse selection can be explained as follows: ex-ante, it is assumed that borrowers of money know better the level of risk associated with their projects. The individual with a high risk project may succeed in getting credit at a high rate of interest. At this high rate of interest an individual with less risky project may be refused credit because it will not make the business viable and threaten his/her loan repayment potential. If the interest rate is raised and the borrower with a higher risk is favoured and defaults, this will threaten the capital base of the lender. Lenders who want to minimise risk will give out their funds at lower rather than higher rates of interest. A realignment of the average quality of the lender's loan portfolio may mean that interest rate mechanism will not bring about market rate equilibrium; rather, rationing of access to credit at a lower interest rate will follow. If

lenders do not maintain different loan portfolios, according to Hoff and Stiglitz (1990) interest rates will rise faster.

Moral hazard phenomenon is part of the problem of imperfect information concerning borrowers' actions. It is the misapplication of borrowed funds that shifts the risk to the lender, especially, if the project does not succeed. Borrowers may be tempted to divert approved loans to other projects with high risk, thereby reducing loan repayment possibility. Lenders may refuse to take actions that will enhance loan repayment due to incentives and enforcement problems (Hoff and Stiglitz, 1990). If the moral hazard phenomenon occurs, solution advocated by the model is credit rationing.

### **2.3 *Interest Rates***

Interest rates can be defined as the premium received by the lender after a stated period of time. From the borrowers point of view, it is the cost of capital at the time of obtaining a loan. There are several schools of thought regarding the interest rates. According to the Classical school, the rate of interest is the main determinant of savings and investment. This school asserted that aggregate investment is inversely related to the rate of interest. This relationship has been observed to be a weak one; that is, investment tends to be fairly interest-inelastic because it is influenced by businessmen's expectations, and yields are normally estimated within a particular range, for example 10% to 15%. So if a small increase in the interest rate occurs, it will not disturb the long-run expansion of the enterprises. The Neo-Classical school maintains that the interest rate is determined by supply (savings) and demand (marginal efficiency of capital). Autonomous increase in savings reduces the interest rate and the additional cost of capital. Because additional investment contributes to diminishing returns, this will cause a 'switch' from less capital-

intensive to more capital-intensive methods of production. The phenomenon of re-switching has led to the two Cambridges' controversy of capital theory (Hardwick, Khan and Langmead, 1990). Keynes believed that the quantity of money played a key role in determining the rate of interest. He viewed the equilibrium interest rate as that rate which equates the supply of money with the demand for money. In a more fundamental sense, the equilibrium rate of interest is determined by factors affecting the supply of money and the money demand. The modern view of interest rates is based on the imperfect information paradigm as explained by Hoff and Stiglitz (1990).

Operationalising interest rate in the context of the demand for credit by the SME's shows the interplay of several factors. According to Funkor (2000), some of these factors include high inflation, cost of intermediation, high credit risk, exchange rates, high bank rate and high treasury bill rates. The average Ghanaian business operator in the private sector, views interest rate as a measure of the price paid by a borrower to a lender for the use of financial resources for a time interval. This research views interest rate as the cost of borrowing money within a stated period.

Before 1988, interest rates were administratively set by the Bank of Ghana (BoG). The financial sector suffered from the distorted macroeconomic policies and deteriorated greatly. Cheap credit was directed to the favoured borrowers, mostly the public sector, at the expense of economic efficiency and productive investment. As a result, financial intermediation in the economy declined. People abandoned the banking system deposits that yielded negative real interest rates of return. These rates were fixed below the rate of inflation, and this resulted in negative real interest rates (see Appendix I). The "high

negative” values that were recorded were as a result of the heightened economic crisis caused by the rippling effect of petroleum shocks in 1975, drought, etc.

The liberalization of the financial sector sought to inject efficiency through competition into the financial system. The liberalization of interest rates occurred in 1988 as part of the Financial Sector Adjustment Programme (FINSAP). This action programme aimed at restructuring distressed banks, strengthening the regulatory and supervisory framework of the BoG, developing financial and capital markets and more generally, liberalizing the financial environment to improve efficiency of resource (savings) mobilization and credit allocation. Thus, a major policy initiative under the FINSAP was financial liberalisation in line with the theoretical postulates of McKinnon (1973), Shaw (1973) and Galbis (1977) among others.

#### **2.4     *Demand for Credit***

The role of credit is to bridge the gap between enterprise owner’s financial assets and the required financial assets of the enterprise. Due to persistence of this imbalance, enterprises are forced to demand credit. Demand for credit, according to Aryeetey *et al* (1994) can be categorised into perceived, potential and revealed demand. Perceived demand is represented by a situation where enterprises that assume to be in need of cash, mention finance as a constraint. Potential demand is characterised by a desire for credit which is not actualised due to market imperfections and institutional barriers. Revealed demand is characterised as written application for financial support at a given rate of interest.

This study agrees with the above categorisation of demand for credit. However, in the case of revealed demand definition which is of cardinal importance to both lenders and borrowers, a further distinction needs to be underscored because the application for credit, even if backed by a bankable project, may not necessarily be translated into effective demand. Gale (1991) defined effective demand as the amount of loans that lending institutions are prepared to release to borrowers. We agree with Gale, but in addition, our definition of effective demand is the actual amount released to the borrowers.

The debate on whether high interest rates affect the demand for credit is inconclusive and may go on indefinitely. There are two main schools of thought. The first school advocates that high interest rates negatively affect the demand for credit because only limited borrowers with high risk projects may have their demand satisfied. Prominent among this school are Stiglitz and Weiss (1981), Stiglitz (1989) and Besley (1994) who argue that high interest rates encourage adverse selection of loan seekers. Those who take high risk and get their loans approved are those with high default rates. These high risky enterprises may not include the Poor and SMEs because they cannot afford risky and high cost investment. In his analysis of demand for rural credit among farmers in Sao Paulo, Brazil, Nehman (1973) observed that borrowing costs strongly affect the willingness of the rural poor to seek loans from formal lenders. Although Aryeetey *et al* (1994) did not make it explicit, they acknowledged implicitly that demand for credit at 30% interest rate was somewhat weaker among medium-sized firms. The second school of thought's assertion is that high interest rates do not affect the demand for credit. The study by Aryeetey *et al* (1994) indicated that the high interest rates were not a major concern for SMEs. In that study, SMEs considered an average annual interest rate of 19.5% to be fair

and reasonable; and this fell below the minimum market rate at that time by seven percentage points.

Non-availability of credit for SMEs prevents them from engaging in productive enterprises or expanding their businesses. Limited access to bank credit can be attributed to bureaucracy and high interest rates which is in line with the first school of thought's assertion. This means that the high interest rates constrain the demand for credit (Boon, 1989). Evidence on the impact of financial sector liberalization on SMEs shows the following: Steel and Webster (1992), Aryeetey *et al* (1994) and Nissanke and Aryeetey (1995) revealed that the financial sector liberalization did not improve access to borrowing by SMEs. They attributed this to tightening of monetary controls, introduction of high-yielding securities to mop up liquidity, and efforts to raise the performance of loan portfolios. Steel and Webster (1989) also pointed out that growth of SMEs has been hampered by the difficulty of financing working capital and new investment. In our view, the latter implies that limitations on the credit to the Poor and SMEs can be explained by the information asymmetry model which portrays limited access to financial capital.

There is opportunity cost attached to decisions to lend monies to SMEs given the relative scarcity of finance. Banks normally feel reluctant to lend to SMEs and this affects the supply of credit to SMEs. Preliminary estimates from recent survey conducted in the year 2000 showed that out of the 16 commercial banks in Ghana, only six provided credit equivalent to ₵10 billion to the micro finance sub-sector which was in need of total credit demand of ₵380 billion. The provision of credit to the tune of ₵10 billion constituted only 1% of the loans and advances in the same year (Opore, 2001).

Most commercial banks appear not to have proven-lending methodology for the financing of the SMEs. Banks underestimate bankable SMEs' demand for credit because they have not developed techniques for overcoming high transaction costs and risks (Aryeetey et al, 1994; Opare, 2001). This problem has contributed to the closure of their branches at the district and sub-district levels. These same banks readily disburse donor loans to SMEs because of the possible foreign exchange gains. Appraisal systems are relaxed because these funds are either guaranteed or provided by donors (Opare, 2001).

High yield of Government of Ghana's risk-free assets particularly treasury bills coupled with unfavourable macroeconomic environment also contributed to the limitation of credit supply. Credit supply limitation was mentioned by Quaicoe (2001). According to her, Akatkyiman Rural Bank's deposit base registered a remarkable growth of ₵800.6 billion in the 2000/2001 financial year whilst the same bank's investment in treasury bills alone stood at ₵600 billion. This means that less financial resources could be made available to borrowers including the Poor and SMEs. Furthermore, the decline of donor funds due to fatigue and the quest for commercialisation of micro-lending have both contributed to the low level of credit to SMEs. In sum, the literature on the demand for credit portrays the difficulty in deriving reliable estimates of demand for credit. A fact acknowledged by Aryeetey (1996).

## **2.5    *Loan Repayment***

Lenders of funds in the formal financial sector use the deposits of their clients whilst lenders operating in the informal sector use mainly their own funds to advance money to borrowers. In either case, the transactions are expected to lead to recouping the financial capital. If this does not happen, borrowers benefit at the expense of lenders.

Assuming this continues, bankruptcy will be the ultimate result and this will reduce financial intermediation.

According to Stiglitz and Weiss (1981), high interest rates lead to adverse selection of loan seekers that affect loan repayment. Besley and Coate (1995) also made it clear that repayment rate will not be 100% at a positive interest rate. Assuming the project return is very low, borrowing at zero interest rate will still not make the borrowers capable of repaying the loan. Thus a positive interest rate increases cost of production, reduces returns from a productive activity and promotes loan default among borrowers.

The modern approach to the problems of credit markets - especially markets which serve SMEs - is based on the theoretical exposition of Hoff and Stiglitz (1990) which emphasises imperfect information and imperfect enforcement of loan contracts. The two authors based their observations on screening, incentive and enforcement problems. The screening problem is due to the inability of lenders to determine satisfactorily the extent of risk inherent in projects submitted for credit facilities. The incentives problem is the cost which lenders would have to incur to make certain that borrowers take the appropriate actions to enhance loan repayment. The enforcement problem, essentially, occurs due to limitations of legal provisions for the enforcement of payments of loans, for example, the selling of collaterals.

Empirical evidence indicates that higher loan repayment performance occurs in Asia as compared to Africa. High loan repayment performance of 80% to 98.6% was reported for four successful rural finance institutions in Asia. These are Bank for Agriculture and Agriculture Co-operatives (BAAC) in Thailand, the Badan Kredit

Kecamatan (BKK) and the Bank Rakyat Indonesia Unit Desa (BUD) in Indonesia, and the Grameen Bank (GB) in Bangladesh (Yaron, 1994). According to Yaron (1994), three main factors contributed to the success story of the aforementioned banks. First, the time of submission of application and disbursement of loans ranged between 1 and 2 weeks for the first time borrowers and in the case of repeat borrowers, the period was just about a day. Second, the use of existing social structures or peer groups to ensure prompt payment and thirdly, the rigid structure of loan repayment and routine meetings, especially of GB group members, in which social pressure was applied to achieve prompt payment and the flexible loan repayment terms that were tailored to cash flow patterns from specific income earning activities of lenders.

In Africa, loan repayment performance has been poor. For example, 14% to 20% for commercial banks in Tanzania (Bagachwa, 1996), and about 45% for small agricultural loans in Ghana (Aryeetey and Nissanke, 2000). In Ghana, such success stories of loan recovery are not easy to come by. We may pose the following question: what is it that has been impeding the loan recovery rates? Besley (1994) asserted that enforcement of loan repayment constitutes a major difference between rural credit markets in developing countries and credit markets in developed countries. Most lending institutions do not have experienced personnel capable of developing innovative financial products suitable for SMEs (Aryeetey *et al*, 1994). The repayment of loans by the Poor and SMEs was recognised as one of the most troublesome problems facing rural financial institutions in Africa. Collateral, access to local information and appropriate local mechanisms to enforce loan repayment are important. A study into the effectiveness of persuasive pressure exerted on default borrowers in Edumafa in the Central Region of Ghana concluded that this can lead to improvement in recovery rates (Kamara and Micah, 2000). Africa compared with

EU countries showed that the latter's commercial banks are closer to SMEs due to their wide networking and proven experience in loan recovery. A close supervisory and monitoring relationship between financial institutions and clients enhances loan recovery. In the case of Ghana and other African countries, there is evidence of poor supervision and monitoring by banks (Lassort and Clavier, 1989; Aryeetey *et al*, 1994).

Loan misapplication and its consequences for loan repayment has been recognised by several authors. It is a phenomenon that can be described as moral hazard. There are several factors that can lead to misapplication of loans. In the first instance, the delay in the release of funds can contribute to this. This viewpoint was brought up vividly by Armah (2001) when she posed this question: "Of what use is a loan to a woman who cultivates groundnuts after the farming season is over?". In the second instance, the percentage of the amount granted tends to be lower and this affects the working capital of SMEs (Aryeetey *et al*, 1994; Armah, 2001). Eventually, the low amount granted affects the returns and the repayment of loans. If the percentage of the amount granted is considered low by the borrower, he/she may misapply the loan, that is, use it for consumption purposes which endangers loan repayment. According to Armah (2001), a woman who became the breadwinner due to the retrenchment exercise under the Structural Adjustment Programme, took a loan of ₵700,000 under the PAF programme. After settling her personal bills, she was left with only ₵200,000 to expand her business. We share the view of the author when she posed this question: "Is it practically possible to expand one's business with as meagre an amount as ₵200,000?" Aryeetey *et al* (2000) also remarked that high interest rate may encourage borrowers to use the money to settle previous loans rather than finance working capital or investment. Several lending practices showed that the grace periods<sup>1</sup> have been

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<sup>1</sup> Grace period is defined as the time lag between the release of funds and the start of the loan repayment.

too short to serve their intended purpose. Especially, this can be felt in the start-up phase of the business. The grace period also affects repayment of loans, although it is intended to protect the lending institutions. (Lassort and Clavier, 1989).

Conflicts in society lead to political instability and fuel risk and uncertainty because they can contribute to different signals given to actors in the financial sector. SMEs get caught in the uncertainties and this affects their ability to pay back loans. We agree with Steel and Webster (1989) and Dzambo (2001) that the success of SMEs credit programmes is contingent upon a minimum level of economic and political stability. Political instability induces changes in political orientation leading to changes in policy paradigms that undermine SME projects (Steel and Webster, 1989).

Political pressure for loan disbursement has been the bane of all SME credit programmes initiated by governments. Political pressure for loan disbursement without knowledge about borrowers' working environment has been recognised by McGregor (1994) to be among the major causes of poor loan recovery. This is the adverse selection outcome. Evidence in Ghana and several countries indicate that the subsidised schemes are not self-sustainable due to political pressure in the disbursement of loans. For example, out of ₵245.7 million disbursed under the PAF by the Ho District Assembly, only 16.4% has been paid back. Due to the poor loan recovery performance, the District Assembly has temporarily suspended further disbursement of the fund (Agbelie, 2001). In the Bawku West District in Ghana, the District Chief Executive also reported that ₵62.12 million out of a total of ₵127 million disbursed to beneficiary groups and individuals for income generation activities has been recovered. This amount represents less than 50% of the total loan disbursed (Seini, 2001). The low rate of recovery can be attributed to the poor strategy

used in the project appraisal. Many beneficiaries acknowledge such loans as “thank you from government”, therefore, they do not see the need to pay back such loans.

The review of literature has shown that there are theoretical and empirical gaps. The direct link between higher interest rates and the demand for credit by SMEs could not be made manifest by all the studies under review. Also, the literature does not establish positive correlation between higher interest rates and loan recovery. Therefore, there is the need to close the gap and this is exactly what this study aims at.

### **3. Methodology**

The methodology has three main components. The first is the model formulation, the second deals with the data design whilst the third focuses on the statistical techniques for the estimation. The model is structured in a way that it assesses the impact of higher interest rates on the demand for credit, and on loan repayment

#### **3.1 Model Formulation**

The model’s description is fashioned in a way that independent variables and their relationship with the dependent variable can be captured. The first relationship can be stated as follows:

$$DC = f(IR, PRO, OE) \quad [1]$$

where DC is demand for credit which is defined as the amount of loan granted by financial institutions<sup>2</sup>, IR is the interest rate; PRO is the annual profit<sup>3</sup>; and OE represents owner’s

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<sup>2</sup> It should be noted that this is in consonance with Gale’s (1991) definition of effective demand for credit as previously explained.

<sup>3</sup> Annual profit is the profit level before interest payment.

equity. Preliminary estimations pointed to a log-linear specification of the demand for credit equation as follows:

$$\text{Log}(\text{DC}) = \alpha_0 + \alpha_1 \text{Log}(\text{IR}) + \alpha_2 \text{Log}(\text{PRO}) + \alpha_3 \text{Log}(\text{OE}) + U_i \quad [2]$$

where  $\alpha_1$  is the interest rate elasticity of demand for credit;  $\alpha_2$  is the profit elasticity of demand for credit;  $\alpha_3$  is the owner's equity elasticity of demand for credit; and  $U_i$  is the stochastic disturbance term. *A priori* restrictions are that:  $\alpha_1 < 0$ ,  $\alpha_2 > 0$ ,  $\alpha_3 > 0$ . The relationship acknowledges that interest rate influences the demand for loan (Nehman, 1973). This can be expected on both theoretical and empirical grounds. However, there are other factors whose influence on the demand for credit needs to be investigated. Annual profit and owner's equity are expected *a priori* to be positively related with the demand for credit. However, interest rate is expected to have a negative relationship with the demand for credit.

The formulation of the loan repayment function is as follows: the Linear Probability Model (LPM) is one of the methods used for qualitative dependent variables. However, since the error term in the LPM has binomial distribution, heteroscedastic variance, and there is no guarantee that the probability will fall within the required bounds, the LPM provides unreliable R-square. Due to the above limitations of the LPM, Logit and Probit models are adopted instead of the LPM; but the Logit model is the most commonly used (Gujarati, 1992).

The sample proportion of occurrence of the event is a linear function of some explanatory variables such that,

$$p_i = X\beta \quad [3]$$

and is related to the true proportion  $P_i$  such as

$$p_i = P_i + e_i \quad [4]$$

where  $P_i$  is the probability of the event taking place (i.e. loan repayment) given the values  $X$  and  $e_i$ , the error term. The logistic model specifies that the probability of loan repayment is given by

$$p(x = 1) = p_i = \frac{e^{X\beta}}{1 + e^{X\beta}} \quad [5]$$

and, the probability of no repayment is therefore,

$$p(x = 0) = 1 - p_i = 1 - \frac{e^{X\beta}}{1 + e^{X\beta}} \quad [6]$$

Hence, the logit model becomes,

$$\frac{p(x = 1)}{p(x = 0)} = \frac{p_i}{1 - p_i} = e^{X\beta} \quad [7]$$

and the log-odds ratio is,

$$\ln \left[ \frac{p_i}{1 - p_i} \right] = X\beta,$$

that is,

$$\ln \left[ \frac{p_i}{1 - p_i} \right] = \beta_0 + \beta_1 IR + \beta_2 PRO + \beta_3 DOD + U_i \quad [8]$$

where  $\beta_i$  are the coefficients of the explanatory variables; and  $U_i$  is the stochastic disturbance term. Each observation in the dependent variable is distributed independently as a binomial variable. It follows that  $U_i$  has a normal distribution with 0 mean and variance of  $\frac{1}{np_i(1-p_i)}$ . That is  $U_i \sim N[0, \frac{1}{np_i(1-p_i)}]$ . The stochastic disturbance term in

the Logit equation is heteroscedastic. *A priori* restrictions are  $\beta_1 < 0$ ,  $\beta_2 > 0$ ,  $\beta_3 < 0$ . The

interest rate and duration of delay in approving the loan are expected to have a negative impact on the natural log of the odd ratio for loan repayment whilst the annual profit is expected to have a positive impact on the natural log of the odd ratio for loan repayment.

### **3.2 Data Design**

The empirical survey was made up of two phases: the pilot (from August 2 to August 14, 2001) and the main survey (from September to November 2001). In the pilot survey, some selected SMEs in three districts in the Central Region of Ghana namely Cape Coast, Mfantsiman and Abura/Asebu/Kwamankese Districts were covered. In the main survey, 9 and 11 out of the 12 districts in the Central Region were covered for SMEs and financial institutions respectively. The population of the study consisted of all SMEs in the selected districts. The sampling frame for banks and non-banking institutions was the total enumeration of the population.

Initially, the survey aimed at developing a sampling frame based on a list of the SMEs provided by CEDECOM and NBSSI in the Central Region. This did not materialise because the two lists were not current since some of the SMEs listed could not be identified either due to change of address or were no more in operation. Consequently, the purposive sampling method was adopted. In this sampling technique, we purposely chose respondents who were thought to be relevant to the research objectives, that is , SMEs that had taken loans from banks and non-banking financial institutions. In all, 50 SMEs spread over 9 districts were interviewed. The distribution of the respondents among the various districts in the Central Region was as follows: Cape Coast District 18, Awutu-Efutu-Senya 9, Mfantsiman 8, Twifu-Hemang-Lower Denkyira 4, Agona and Gomoa 3 each, Assin and Asebu-Kwamankese 2 each, and Ajumako-Enyan-Essiam 1. The distribution was skewed

due to the concentration of SMEs in some of the districts, especially Cape Coast Municipality.

Two sets of interview schedules were used in order to achieve the objectives of the main survey. The schedules are presented in Appendix II. The first interview schedule was administered to the banking and non-banking institutions. The main import of this schedule was to find out from the respondents whether interest rates affected loan recovery performance. Additionally, factors taken into consideration in determining interest rates and conditions attached to the loans constituted some of the major issues investigated. Furthermore, the causes of poor loan recovery, a major concern for organisations involved in the implementation of development credit projects and programmes and banking firms, were looked into. The second interview schedule was administered to 50 SMEs. The interview sought to gather data on capacity utilization, costs of and returns on production, attitude towards borrowing, whether their enterprises have been supported by loans, the amount borrowed and the relevant interest rate among others.

### **3.3 *Estimation Method***

Regression analysis based on ordinary least squares procedure was used to establish the relationship between the dependent and independent variables in equation [2]. In the case of equation [8], we used the Maximum Likelihood Estimation method. The natural logarithm of the odds ratio was regressed on the independent variables: interest rates, annual profit, and duration of delay in approving the loan. The MICROFIT Software was used in the estimation of both equations. The data gathered for the econometric estimations concern the situation prevailing in September – November, 2001.

## 4. Analysis

The analysis of the data is made up of three components. The first focuses on banks and non-banking financial institutions, the second on SMEs and the third focuses on the econometric analysis with emphasis on interest rate and the demand for loans on the one hand, and interest rate and loan repayment on the other.

### 4.1 *Banking and Non-Banking Institutions*

The distribution of banking and non-banking institutions interviewed shows that 18 out of 25 are rural and community banks. Five are commercial banks whilst the remaining two, namely, NBSSI and CEDECOM are the non-banking institutions. Twenty out of twenty-three banking institutions reported that the interest rate ranges from 41% to 50%. The lowest interest rate of 20% per annum was charged by the NBSSI. This is due to the source of its funds which are provided by Government and External Support Agencies (ESAs). Different interest rates for different sectors were reported by these institutions. These rates are influenced by BoG's guidelines. The rates are lower than the interest rates charged by the informal financial suppliers including susu collectors and money lenders (Aryeetey and Gockel, 1991). The survey revealed that banks use various factors in determining interest rates. The factors and the respective percentages of banks that cited them are: BoG's recommended rates (44%), rate on T-bills (36%), cost of funds (28%), rates of other banks, inflation rate and risk (16% each) and type of economic activity (4%).

The main objective of lending institutions is the borrowing and lending of money as compared with institutions that are responsible for the promotion of SMEs. The latter's orientation is towards growth, sustainability and development of SMEs. Banking

institutions' conditions for giving out support are different from other institutions. The lending institutions have some conditions attached to the granting of loans. These conditions which are synonymous with litmus paper have been captioned as

“CAMPARI” where

C = Character, the disposition, behaviour and the background of the applicant.

A = Ability, defined simply as capacity of the applicant for work and his technical know-how.

M = Margin (Interest Rate), the mark-up the lending institutions put on the loan;

P = Purpose, this represents what the money is going to be used for and whether it falls in line with activities and sectoral priorities identified by lending institutions;

A = Amount, whether the magnitude of the amount requested can be met by the lending institution;

R = Repayment, the capacity to payback; and

I = Insurance (Security), the tangible evidence of pledge.

The financial institutions surveyed sometimes fail to grant loans. The major reasons and the respective percentages of the banks that cited them are: lack of funds (56%), unviable project (44%), poor past credit record (36%), and loan requirement being outside bank's credit policy (24%). All banking institutions operating in Ghana follow guidelines established by the Bank of Ghana. In the case of rural banks, the guidelines stipulate the following: 10% of total deposits for administration, 52% for secondary reserve requirement (treasury bills) and 38% as loans. Although the amount remaining for lending appears small, returns on secondary reserves are safe and attractive.

A sizable percentage of the loan portfolio is given out as advances to salaried workers. The preference for salaried workers is due to minimum risk attached to lending to this group. It is of interest to note that the percentage of funds that remains for SMEs is reduced and this explains why most SMEs do not get the full amount they request for. This problem could be contained by relying on project funds that are channelled through CEDECOM, NBSSI and EMPRETEC Ghana Foundation. The amount received by these institutions is inadequate and they are also not able to recycle these funds due to the build-up of arrears. For example, the amount which is given to NBSSI for disbursement as loans to SMEs is less than 40% of the actual requests.

To minimise default in the repayment of loans, banks request for collaterals. From their point of view this seems tenable but from the borrowers' point of view this seems difficult to satisfy. This study attempts to look at the types of collaterals/guarantees demanded by the financial institutions. The outcome shows that rural/community banks have modified their requirements. They no longer insist on immovable assets as a pledge, rather guarantors are preferred. The modified requirements and the percentage of banks that cited them are personal guarantors (89%), being a customer of the bank (89%), treasury bills and government stock certificate (61%), fixed properties (61%), insurance (33%) and group lending (11%). These results compare favourably with the works by Steel and Webster (1989), and Kamara and Micah (2000) who stated the lack of collateral as a reason given by commercial banks for not granting loans to SMEs.

Another major objective of the survey was to investigate the loan recovery performance since this will influence the magnitude of future lending pattern. Arrears build-up in payment means an erosion of the capital base and this situation hastens the path

to bankruptcy. Two methods were used to assess loan recovery performance. These are the average and scoring methods<sup>4</sup> depicted in Table 1 below:

**Table 1: Loan Recovery Performance (Enterprises)**

| Category | Average Recovery Rate | Scoring Technique |
|----------|-----------------------|-------------------|
| Small    | 76.5%                 | 3.3               |
| Medium   | 70.9%                 | 3.1               |
| Large    | 66.2%                 | 2.8               |

Source: Survey of Banks by the Researchers, 2001.

These two methods produced the same outcome, that is, the average recovery rate for small-scale enterprises was 76.5% and the score for the same group was 3.3. Financial institutions, particularly, rural/community banks that deal with small-scale enterprises recorded the highest recovery rate. Their closeness to borrowers due to their wide network, monitoring of loans and their preference for short-term loans compared to commercial banks, culminate in the high recovery rate. Additionally, they adopt instalment payment strategy to recover the loans granted. Furthermore, they operate through group lending scheme and personal guarantees as collaterals for granting loans. Irrespective of the high administrative cost in granting loans to small-scale enterprises scattered within a wide space, risk is spread wider and this lowers the risk of having a low recovery rate.

Lack of monitoring, high interest rates and poor appraisal were advanced as the three main factors that affect loan recovery performance. The combined weight of the three is more than 60% of the contributory factors. Attitude of beneficiaries regarding the repayment of loans in general was mentioned as a contributory factor to poor recovery of loans. It is common knowledge that many people who borrow money feel that there is

<sup>4</sup> The scoring method is structured as follows: 1 = 20 – 39%, 2 = 40 – 59%, 3 = 60 – 79% and 4 = 80% and above recovery rates.

nothing wrong in paying back at a later date than the prescribed date. They feel that the funds from government are gifts; some of them recognise that they have been cheated for far too long, therefore, not paying back the loans is a form of levelling income in society. The remaining factors, namely, timely disbursement of loans, proper management of business, provision of securities, incentives and reduction in the interest rate accounts for less than 10% each.

#### **4.2 *Small and Medium Scale Enterprises (SMEs)***

Out of the 50 enterprises interviewed, 49 were typified as small-scale enterprises and one was a medium-scale enterprise. The mean age of the respondents is 41.5 years. About 50% of the respondents fall within the 20 – 40 age cohort. This is the age group that tends to be productive and resourceful and could bring about change in the input-output mix. The assumption is that age might affect the demand for loan because the older a person is, the more likely the lending agency, among other things, will be willing to consider the application. The mean household size from the sample survey is about 6 people per household with a standard deviation of 3. This agrees with the national household size. There is a general conception that the larger the household size, the more likely that the loan would be used for consumption rather than investment purposes and this may affect loan repayment. The result of the study did not support this general conception since the variable was not statistically significant in the preliminary regressions.

Economic activities undertaken by the SMEs are as follows: food processing (11), woodwork/metalwork (19), electrical/refrigeration (2), distilleries/salt mining (4), dressmaking (8) and oil extraction/soap-making (6). About 50% of the entrepreneurs involved in dressmaking, oil extraction, soap manufacturing and food processing were

women. There is specialization of activities and products among some of the enterprises. There are both forward and backward vertical integration. For example, enterprises engaged in oil extraction, manufacture soap; and dressmaking enterprises also undertake batik production.

An individual SME's aversion to borrowing influences its potential to demand credit. In this regard, the study tries to assess SMEs' attitude towards borrowing. The result shows that 68% of the respondents considered borrowing to be bad. They were of the view that pressure exerted by banks as well as terms on loans were too harsh, and that interest rates were too high so they preferred to go without loans. Many of the SMEs alluded to the terms of the loans as being the most crucial.

It is well known that SMEs do not appreciate information as a resource, for example, record-keeping and other simple management tools, which affect the profitability and expansion of their enterprises. For this reason, the study sought to find out the information base of these enterprises. As many as 13 out of 50 respondents do not keep records of any kind at all. The others keep rudimentary information like cashbook. The planning and programming of the expansion of business activities in an orchestrated and orderly form is a *desideratum* for the growth and sustainability of enterprises. The culture of not keeping records is linked with the less weight given to the formulation of business plans. The study's outcome shows that majority of the enterprises do not have business plans. The 14 that reported that they have business plans could not really produce them which meant that they have the desire to expand their businesses but these plans were not properly documented. This partially shows why most SMEs remain small for a very long time.

The fast nature of technology means that enterprises which do not get acquainted with it run the risk of missing the boat. Innovation and productivity enhancement, the anchors upon which dynamic businesses rest, cannot be carried out, if the targeted group (SMEs) do not take advantage. From the survey, it was realised that as many as 42% of entrepreneurs had not attended any workshop/seminar. Most of those who reported that they have attended workshops availed themselves once and were concentrated in Cape Coast, the regional capital. This indicates that all those enterprises outside Cape Coast hardly took advantage of this facility. The technology-learning gap characterises most of these enterprises.

The owner's equity is the amount of financial capital contributed by the owner of an enterprise. The lending institutions prescribe this as one of the conditions for lending money. The owner's equity of the majority of SMEs (about 33) falls below ₵40 million. Additionally, the unit cost of output of the SMEs was higher due to limited scale and the under utilisation of installed capacity. The results indicate that more than 50% of the SMEs sampled operate on the average 48% of their installed capacity. Several factors contribute to this, especially the absence of finance (credit), which hinders the purchasing of inputs required at the right time.

One of the objectives of this paper was to ascertain whether SMEs benefited from banking and non-banking financial institutions. The interview indicated that out of 50 respondents, 42 have had loans. The high percentage of SMEs which had benefited from loans should not be strictly interpreted as a positive trend because the selection of enterprises was based, amongst other things, on the criterion of whether they have had

loans before. However, most of the SMEs reported that they did not get the full amount they requested for.

Generally, the terms of the loan repayment was the instalment payment system which represented 72%, followed by grace period 24% and group lending scheme 4%. The grace period ranged between 1 and 2 months depending on the type of enterprise. It can be inferred that the financial institutions lay emphasis on how to recover their loans rather than giving adequate grace period to cushion the cost burden of the loan. This accounts for the emphasis laid on the instalment payment system. About 56% of the respondents were not satisfied with the terms of the loans. Those who were dissatisfied attributed this to inadequate amount approved (as was shown by Aryeetey *et al*, 1994; Armah, 2001), short duration for loan repayment, late disbursement of loans and high interest rates. They opined that the gestation period of the economic activity should have been considered in planning the repayment schedule. Those who were satisfied also attributed their satisfaction to the instalment payment system, low interest rate, grace period, timely disbursement of loans and the flexibility to plan their own repayment schedule.

The study purports to ascertain the timeliness of release of loans and the lead time for loan approval since economic activities are time bound. The result showed that 83% of the respondents did not receive loans at the appropriate time. This lends support to the outcome concerning the timeliness of release of loans where 35 out of 42 respondents said the loans were not received at the right time. The procedures and processes for loan approval tend to be bureaucratic and time consuming. The result is that beneficiaries receive their loans late and are not able to apply them at the right time. Inevitably, the delay affects output and their ability to pay back the loan as well.

The monitoring of loans granted to the SMEs plays a very important role in loan repayment. The number of visits from officials to the entrepreneurs was about 6 times in a year. Among other factors, the level of loan repayment achievement can be associated with the number of visits from lending institutions.

### 4.3 *Econometric Analysis*

The demand for credit equation was estimated using ordinary least squares (OLS) since each of the explanatory variables has been assumed as exogenous. The results are shown in Table 2 below:

**Table 2: OLS Estimation**

| Dependent Variable: Natural Log of Demand for Credit |                    |                  |
|------------------------------------------------------|--------------------|------------------|
| <b>Regressor</b>                                     | <b>Coefficient</b> | <b>T – Ratio</b> |
| Constant                                             | 13.3503            | 2.5891           |
| Log (IR)                                             | -1.6508            | -1.7819          |
| Log (PRO)                                            | 0.33108            | 1.9741           |
| Log (OE)                                             | 0.13990            | 0.7499           |
| R-Bar- Squared = 0.19199                             |                    | F = 4.0888       |

The equation is satisfactory in terms of its goodness of fit (F-statistic = 4.0888, significant at 1.3% level). However, the adjusted R-Squared of 0.19199 shows a weak explanatory power. This suggests that there are other factors that explain the demand for credit. The signs of all the coefficients of the explanatory variables are as expected. Apart from the owner's equity (OE), the coefficients of the explanatory variables are significant. The results show that there is a negative relationship between interest rate and the demand for loans as pointed out by Boon (1989). The interest rate variable is statistically significant at

8.3% level. This shows that the interest rate is a key variable that determines SMEs' demand for credit and contradicts the earlier study by Aryeetey *et al* (1994). The negative interest rate coefficient explains the inverse relationship between interest rate and demand for credit. It was expected that there is a direct relationship between demand for credit and annual profit. The estimated coefficient of 0.331 with a t-ratio of 1.974 is significant at 5.6% level. This means that SMEs that are viable are likely to be considered for loans by the lending institutions.

The Maximum Likelihood Estimation method was used to estimate the Logit Equation [8]. The results are shown in Table 3:

**Table 3: Logit Maximum Likelihood Estimation**

| Dependent variable: $\ln \left[ \frac{p_i}{1 - p_i} \right]$ |                        |                            |
|--------------------------------------------------------------|------------------------|----------------------------|
| <b>Regressor</b>                                             | <b>Coefficient</b>     | <b>T – Ratio</b>           |
| Constant                                                     | 9.8177                 | 2.1482                     |
| IR                                                           | -19.7703               | -2.2435                    |
| PRO                                                          | $1.507 \times 10^{-7}$ | 1.1170                     |
| DOD                                                          | -0.087142              | -1.8803                    |
| Goodness of fit = 0.90244                                    |                        | Pseudo-R-Squared = 0.41600 |

The estimation appears to give a reasonable goodness of fit (goodness of fit = 0.902) and moderate explanatory power (Pseudo R-Squared of 0.416). The signs of all coefficients are as expected. The results show that interest rate is statistically significant at 3.1% level. The negative coefficient for the interest rate variable implies that as interest rate increases, the natural logarithm of the odds ratio decreases and this means that the probability of loan repayment decreases as well. Typically, a 1% increase in interest rate reduces the predicted probability of loan repayment by 2.65%. This is computed by finding the marginal effect

of interest rate. The outcome was not surprising since high interest rates were reported for most of the SMEs. This adversely affects their ability to pay back the loans. The results give credence to the earlier assertion by Aryeetey *et al* (2000) that higher interest rates adversely affect the ability of SMEs to pay back loans. The timeliness in the release of the approved loans as measured by duration of delay in obtaining loans (DOD) is assumed to impact negatively on the repayment of loan. The coefficient for DOD is significant at 6.8% level which shows that timeliness affects the repayment of loans. This supports the assertion by Armah (2001) that poor timing leads to misapplication of funds and the resultant poor loan recovery. It was assumed that repayment of loan would be influenced positively by the level of profit. Even though the coefficient of the annual profit variable has the right sign, a t-ratio of 1.117 makes it statistically insignificant.

#### **4.4. *Shift in Paradigm***

In general, interest rates were realigned to reflect their true market values since the inception of the Economic Reforms. Even though this can be justified on economic grounds it has unleashed some difficulties in general, and on the Poor and SMEs, in particular. Specifically, it increases their cost of production and this has also affected their net returns. The attractiveness of treasury bills has contributed to the banks putting their money into this portfolio. The main effect is the movement of resources from the areas where the SMEs are located to the centre. This means that SMEs' needs are not satisfied. The agencies responsible for the development of SMEs (CEDECOM and NBSSI) seem to be cash-strapped and this has made it difficult for them to satisfy the demand of the Poor and SMEs.

A major policy shift is that there should be a reduction in interest rates to about 20%, a view held by majority of the SMEs. The interest rate between the banks and non-banking institutions should be converged in order to encourage the recovery rate of both the bank and non-banking institutions. Attempts should be made to reduce the interest rate on treasury bills. There are implications for the national budget. It will affect revenue of Central Government, but a reduction in government expenditure will offset the loss in revenue. Government needs to improve its domestic resource mobilisation through the broadening of the tax base. The non-banking institutions should be properly resourced so that they would be able to support the SMEs to develop their capabilities. The repayment schedule should be dovetailed to the income flows of the SMEs. The SMEs should be brought closer to the state-of-the-art through education. Access to credit by SMEs can be boosted, if the commercial banks design appropriate collateral substitutes to replace their traditional collateral requirements.

## **5. Conclusion**

The study found out that there are several banking and non-banking institutions which are involved in the financing of SMEs in the Central Region of Ghana. By the end of December, 2001, the average interest rate on 91-day treasury bills had declined from 47% at the end of June, 2001 to 28.9%. Unfortunately, the decline in interest rates has not fully reflected in the lending rates of banks. Banks' lending rates have only marginally declined from a range of 39 – 55% at the end of December, 2000 to 39 – 53% at the end of December, 2001. The high nominal lending rate of 45% supports the expected outcome of the McKinnon-Shaw hypothesis.

This study reveals that the banking institutions charge higher interest rates of about 45% compared with 20% interest levied on loans by the NBSSI. The different interest rates can be attributed to the sources of the funds. The commercial banks prefer giving their funds to medium and large-scale enterprises. The rural/community banks also grant loans to the small-scale enterprises. Their proximity to these enterprises, limited capital and their desire to minimise risks make them opt for these enterprises.

Several rural/community banks asserted that the BoG's lending guidelines where 52% of their financial resources are put into treasury bills and 10% into administrative expenditure leaves only 38% for on lending to borrowers. Some of these banks tend to channel a large proportion of their funds to salaried workers. This means that SMEs are marginalised. The view that the guidelines limit the credit creation of banks needs to be accepted with a pinch of salt since the merits of this policy like ensuring profitability cannot be ignored. Additionally, collateral security, a major criterion for the granting of credit by banks in general is losing its importance with the rural/community banks. Criteria such as personal guarantee and group formation are being used instead of the former.

The study examined the central issue whether there is empirical evidence concerning the relationship between high interest rate and the demand for credit by the SMEs. The relationship is negative and statistically significant. A factor contributing to this is the SMEs' aversion for borrowing due to the high interest rates. The study shows that factors like owner's equity and annual profit are correlated with the demand for credit. Owner's contribution as a determinant was anticipated because financial institutions are favourably disposed to enterprises which own greater share of financial capital.

The study established a relationship between interest rate and loan repayment. Interest rates negatively affect the loan repayment performance. Additionally, the study found out that duration of delay in granting loans affects loan repayment. The study indicates that about 80% of those who were considered for loans, did not receive the approved amount at the right time. Furthermore, only 50% of the requested amount was released to these enterprises and this affected the purchasing of inputs, expected production and supply levels. The SMEs also identified the following as the causes of loan default: lack of ready market, approval of low proportion of loan applied for and low profit margin. Suggestions by the banking and non-banking agencies on improving loan recovery include reduction of interest rate, good appraisal and the use of appropriate strategy. The simultaneous application of these factors might lead to the expectations and desires of the SMEs being satisfied.

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# APPENDIX I: Interest Rates (1970 – 2000)

| Year | NLR   | NIR   | RLR    | RIR     | Year                                                                                                             | NLR   | NIR   | RLR   | RIR    |
|------|-------|-------|--------|---------|------------------------------------------------------------------------------------------------------------------|-------|-------|-------|--------|
| 1970 | 10.0  | 6.75  | 7.0    | 3.75    | 1988                                                                                                             | 25.58 | 21.04 | -5.82 | -10.36 |
| 1971 | 14.5  | 11.0  | 6.5    | 3.0     | 1989                                                                                                             | 30.3  | 23.15 | 5.1   | -2.05  |
| 1972 | 14.5  | 11.0  | 3.7    | .2      | 1990                                                                                                             | 30.3  | 24.65 | -6.8  | -12.45 |
| 1973 | 10.0  | 7.5   | -7.1   | -9.6    | 1991                                                                                                             | 30.5  | 25.91 | 12.5  | 7.91   |
| 1974 | 10.0  | 7.5   | -8.8   | -11.3   | 1992                                                                                                             | 29.0  | 22.66 | 18.9  | 12.56  |
| 1975 | 12.5  | 10.0  | -17.3  | -19.8   | 1993                                                                                                             | 30.5  | 27.07 | 5.5   | 2.07   |
| 1976 | 12.5  | 10.0  | -42.9  | -45.4   | 1994                                                                                                             | 30.5  | 26.83 | 5.6   | 1.93   |
| 1977 | 12.5  | 10.0  | -104.0 | -106.5  | 1995                                                                                                             | 36.0  | 32.37 | -23.5 | -27.13 |
| 1978 | 19.0  | 15.25 | -54.1  | -57.85  | 1996                                                                                                             | 40.5  | 37.5  | -6.1  | -9.1   |
| 1979 | 19.0  | 15.25 | -35.5  | -39.25  | 1997                                                                                                             | 42.0  | 38.88 | 14.2  | 11.08  |
| 1980 | 19.0  | 15.25 | -31.1  | -34.85  | 1998                                                                                                             | 38.0  | 35.03 | 23.4  | 28.43  |
| 1981 | 19.0  | 15.25 | -97.5  | -101.25 | 1999                                                                                                             | 36.9  | 30.23 | 24.47 | 17.8   |
| 1982 | 19.0  | 15.25 | -3.3   | -7.85   | 2000                                                                                                             | 35.2  | 30.2  | 9.6   | 4.6    |
| 1983 | 19.0  | 15.25 | -103.8 | -107.55 | NLR = Nominal Lending Rate<br>NIR = Nominal Interest Rate<br>RLR = Real Lending Rate<br>RIR = Real Interest Rate |       |       |       |        |
| 1984 | 21.17 | 18.34 | -17.83 | -20.66  |                                                                                                                  |       |       |       |        |
| 1985 | 21.17 | 18.46 | 10.77  | 8.06    |                                                                                                                  |       |       |       |        |
| 1986 | 20.0  | 18.5  | -4.6   | -6.1    |                                                                                                                  |       |       |       |        |
| 1987 | 25.5  | 21.54 | -14.3  | -18.26  |                                                                                                                  |       |       |       |        |

Sources: International Financial Statistics (various issues).  
The State of the Ghanaian Economy (various issues)

## APPENDIX II: Questionnaires

### A.II.1. Questionnaire 1. Respondents: Proprietor/Proprietress/Owner/Managers of Enterprises

#### Section A

1. Region : ..... District: .....
- Village/Town: ..... House No./Street Name: .....
2. Scale of Business: Small [ ] Medium [ ]
3. Type of Business/Economic Activity .....
4. Name of Enterprise: .....
5. Sex: Male [ ] Female [ ]
6. Age: .....
7. Educational Attainment: .....
- Middle School/J.S.S. [ ] S.S.S [ ]
- Technical/Vocational [ ] Others Specify .....

#### Section B:

##### Loans

8. How long have you been doing this business .....
9. Have you obtained a loan before? Yes [ ] No [ ]
10. State the name of lending agency and year when you obtained the last loan. ...
11. How much loan did you apply for .....
12. What was the amount approved? ..... Principal..... Interest.....
13. What were the terms of the loan?.....
14. Were you satisfied with the terms? Yes [ ] No [ ] Reasons .....
15. Did you receive the loan at the right time? Yes [ ] No [ ]
16. State the duration of delay in obtaining each loan .....

##### Capacity Utilization

17. State maximum output per working day .....
18. State actual (achieved) output per working day .....
19. What period does the actual result refer to? .....
20. Technology Type
- Simple [ ] Intermediate [ ] Advance [ ]
21. Financial Capital
- Amount/Owners equity ..... Amount Borrowed .....

##### Demographic Factors

22. Family Size ..... [ ] Children [ ] Adults [ ]

##### Attitude

23. What do you think of owing in general?
- Good [ ] Bad [ ] Indifferent [ ]
24. What do you think of borrowing from banks in general, if credit is available?
- Economically sound option [ ] Not economically sound option [ ]
25. Timing of Release of loan
- Satisfactory [ ] Non-satisfactory [ ]
26. Did you have any visits from loan officials/agency? Yes [ ] No [ ]
27. If Yes, was it
- Once in 3 months [ ] Once in 6 months [ ]
- Once in a year [ ] Never [ ]

##### Management

28. Do you keep any records? Yes/No .....
29. If Yes, what type of records are kept? .....
30. Do you have a business plan? Yes/No. ....
31. Have you attended any workshop/seminar/training related to your business? Yes/No
32. If yes, which year? Year.....
33. What amount and percentage of the loan has been paid back?
- Amount ..... Percentage .....

34. Which months and year(s) did you pay the amount? .....
35. What prevented you from paying the amount according to the agreed repayment schedule?  
.....
36. How old is the amount outstanding, (arrears) .....

**A.II.2. Questionnaire II. Respondents: Financial Intermediaries**

1. Region/District: ..... 2. Name of institution: .....
3. What type of borrowers do you deal with? Small/ Medium/Large Scale Enterprises
4. Which of the categories of borrowers above do you prefer most? Give reasons
5. Is there an opportunity cost associated with giving loans to each of the above? Yes/No  
If yes, specify: .....
6. State the Breakdown of the loan recovery performance in the past few years of the  
Small Scale Enterprises (ii) Medium scale Enterprises (iii) Large Scale
7. What (in your opinion) are the causes of the poor loan recovery performance?.....
8. Do you think interest rates affect the repayment ability of borrowers? Yes/No.....  
If No, how? ..... Give reasons.....
9. What factors do you use in determining your interest rate? .....
10. Do you have any suggestion (s) as to how to improve on loan recovery performance?  
.....
11. Do you sometimes fail to grant loans? Yes/No Why? .....
12. Do you ask for security against loans granted? Yes/No .....
13. If Yes, what type of securities are preferred .....
14. What is the current lending? .....
15. Do you charge different enterprises different lending rates for similar loan sizes and term?  
Yes/No.....If yes, why?.....
16. Are there some necessary conditions/ incentives that will enable the institution to expand private  
sector lending especially to the SMEs ? If so, name them .....