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**University
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Business School

**The Microstructure of Bank Lending to SMEs: Evidence
from a Survey of Loan Officers in Nigerian Banks**

By

VICTOR UCHE EKPU

(Student No: 0802848)

**Being a Thesis Submitted to the Adam Smith Business School,
College of Social Sciences**

University of Glasgow

**In part-fulfilment of the Requirements for the Award of Doctor of
Philosophy (PhD) in Economics**

September 2015

ABSTRACT

The opacity and riskiness of small and medium sized enterprises (SMEs) make them an interesting area for the study of banks' lending practices and procedures. SMEs in Nigeria, like in many low and middle-income economies, face financing difficulties because they are relatively young, inexperienced and informationally opaque. Since the consolidation of the Nigerian banking industry in 2006, the share of commercial bank loans to SMEs has declined markedly despite the fact that Nigerian banks are well capitalized and are among the largest players in Sub-Saharan Africa. The researcher conducted a questionnaire survey to investigate the microstructure of SME lending decisions, policies and practices in Nigerian banks. Using a sample of 121 Nigerian bank lending officers, this study specifically investigates three research questions: (1) the demand and supply side constraints to bank involvement with SMEs (2) the determinants of loan contract terms (i.e. risk premium and collateralisation), and (3) the economic value to banks from investing in customer relationships.

Results from analysis of survey responses reveal that the *high incidence of loan diversion*, *weak management capacity* and *the inability of SMEs to service debts* are chief contributory factors to the riskiness of SME loans in Nigeria. On the supply side, the *high transaction costs* associated with processing and monitoring small loans impact negatively on lending profitability. There are also constraints posed by regulation and the business environment. Most notably, the recent rise in *yield on competing assets*, such as government treasury bills, has led to the crowding out of private sector lending as Nigerian banks hold a sizeable proportion of their assets in relatively safer government securities, which tends to lower their appetite for lending to SMEs. The risk profile of the SME sector is further enhanced by *poor information economics*, *infrastructural deficiencies*, the *inefficient credit referencing* on business loans as well as the *inability to enforce loans contracts* due to legal and judicial constraints.

The econometric results show that the determinants of risk premium on SME loans are largely connected with factors that underline the opacity and riskiness of SMEs in Nigeria. Customers with longer relationships with their bank tend to benefit from lower interest rates. What determines the likelihood of requesting collateral from SMEs varies significantly from bank to bank and is likely to be connected to the lenders' specialization as well as differences in the business model and lending technologies used. Loan size, borrowing firm's age and credit rating also determine the amount of collateral pledged.

There is also evidence to suggest that the predominantly centralised lending strategy in Nigerian banks impacts negatively on the accumulation of soft information by loan officers, implying that not all information collected by the loan officers is utilised in taking lending decisions. However, the proprietary information (or knowledge) loan officers gather through frequent communication and interaction with their customers is likely to yield some potential benefits for Nigerian banks. The most dominant is the high probability that customer satisfaction from bank relationships will generate repeat business for the banks.

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ACKNOWLEDGEMENT

I am extremely grateful to my supervisors, Dr Alberto Paloni and Jeanette Findlay for their great support, professional expertise and constructive comments as well as for their conscientious efforts and patience in reading the draft severally during the period of this doctoral thesis. It would not have been possible to complete this thesis except for their guidance and painstaking commitment. I would also like to appreciate my external examiner, Professor Jake Ansell, and my internal examiner, Dr Margaret Fletcher, for their insightful comments and contributions.

I am indebted to the Scottish Institute for Research in Economics (SIRE) for funding my PhD studies and the Adam Smith Business School for funding the survey project. Special thanks also goes to the Relationship Managers/Loan Officers in Nigerian banks for agreeing to respond to the questionnaire and for their time and commitment.

My immense gratitude goes to my beloved wife, Mrs Alaere Ekpu, for her love, patience and understanding all through the duration of my study. I also thank my parents, Mr & Mrs S.D Ekpu, my brother, Peter Ekpu, my other siblings, and my Mother in-law, Mrs Melland Samuel, for their prayers, moral support and encouragement in seeing to the completion of my studies. Special thanks also goes to my colleagues and friends, Chioma Nwafor and Timothy Birabi, for their unwavering support and our fruitful collaborations in the course of my studies.

Above all, I am most grateful to Almighty God, for his grace, love, infinite wisdom, knowledge and understanding granted me all through the studies.

AUTHOR'S DECLARATION

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Signature:

A handwritten signature in black ink, appearing to read 'Victor Uche Ekpu', written over a faint horizontal line.

Printed name: **VICTOR UCHE EKPU**

KEY ABBREVIATIONS

ACGSF -	Agricultural Credit Guarantee Scheme Fund
ACSS -	Agricultural Credit Support Scheme
AMCON -	Asset Management Corporation of Nigeria
ANOVA -	Analysis of Variance
BBA -	British Bankers Association
BERR -	Department for Business Enterprise and Regulatory Reform
BIS -	Department for Business Innovation and Skills
BOA -	Bank of Agriculture
BOI -	Bank of Industry
CACS -	Commercial Agricultural Credit Scheme
CAR -	Capital Adequacy Ratio
CBN -	Central Bank of Nigeria
CGI -	Corporate Guides International Limited
DMBs -	Deposit Money Banks
EDCs -	Entrepreneurship Development Centres
EFG -	Enterprise Finance Guarantee Scheme
EFP -	External Finance Premium
FCMB -	First City Monument Bank
FCT -	Federal Capital Territory
FOS -	Federal Office of Statistics
FSS -	Financial Sector Strategy
GAAP -	Generally Accepted Accounting Principles
GDP -	Gross Domestic Product
GTB -	Guaranty Trust Bank
IFRS -	International Financial Reporting Standards
IQR -	Interquartile Range
LO -	Loan Officer

LTD -	Loan-to-Deposit Ratio
LTV-	Loan-to-Value Ratio
MFBs -	Microfinance Banks
MFI -	Microfinance Institutions
MSMEs -	Micro, Small and Medium Enterprises
MSMEDF -	Micro, Small and Medium Enterprises Development Fund
MWW -	Mann-Whitney-Wilcoxon Test
NDIC -	Nigeria Deposit Insurance Corporation
NEXIM -	Nigeria Export-Import Bank
NIPC -	Nigeria Investment Promotion Council
NPL -	Non-Performing Loans
NSSBF -	National Survey of Small Business Finance
OLR -	Ordinal Logistic Regression
PAT -	Profit After Tax
PBT -	Profit Before Tax
PLR -	Prime Lending Rate
P2P-	Peer-to-Peer Lending
ROAA -	Return on Average Assets
ROAE -	Return on Average Equity
RM -	Relationship Manager
SAP -	Structural Adjustment Programme
SMEs -	Small and Medium Sized Enterprises
SMEDAN -	Small and Medium Enterprises Development Agency
SMEEIS -	Small and Medium Enterprises Equity Investment Scheme
SPSS -	Statistical Package for Social Sciences
SSA-	Sub-Saharan Africa
STATA -	Statistical Analysis Package
UBA -	United Bank for Africa

CHAPTER 1

INTRODUCTION

1.1. Background to the Study

Over the past decade, the subject of bank finance for small and medium enterprises (SMEs) has become a topic of importance both to national governments and internationally across countries (as some World Bank research papers have revealed – Ayyagari et al., 2008, 2012; Beck and Demirguc-Kunt, 2006; Beck et al., 2006, 2008a,b, 2011; Berg and Fuchs, 2013). On the one hand, in the wake of the global financial crisis in 2008, there has been much comment that banks are not lending enough to businesses, especially to SMEs; that lending is conducted at rates that are too high, and that banks are turning down loan requests for viable businesses. On the other hand, over this same period, many banks around the world have seen a steady decline in demand for loans and a steep increase in the cost of wholesale funding, upon which much of their lending depends.

In developing economies such as economies in Sub-Saharan Africa, SMEs are typically more credit-constrained than large firms, severely affecting their possibilities to grow and expand (Beck et al., 2005, 2006; Beck and Demirguc-Kunt, 2006; Beck et al., 2008a; Ayyagari et al., 2008, 2012). With respect to external financing to SMEs, banks have an important role to play as dominant players in the financial system in Sub-Saharan Africa, especially when it comes to serving the higher end of the SME market segment. This is mostly due to the limitations of informal finance in providing capital for business expansion (Ayyagari, et al., 2012). Other external financing options such as corporate bonds and organised securities markets are typically only accessed by larger firms requiring longer term funding (Beck et al., 2008a).

The extent to which commercial banks lend to SMEs depends on a range of country and bank-specific factors. Among the main factors impacting bank financing for SMEs are *inter alia* the macroeconomic environment, the legal and regulatory environment, the state of the financial sector infrastructure, banks' own internal limitations in terms of lending capacity and technology, and SME-specific factors, particularly the SME landscape in terms of number, size, and sector of business operation, as well as the inadequacy of proprietary information on SMEs (Berger and Udell, 1998; Beck et al., 2008b; de la Torre et al., 2010; Beck et al., 2011).

This study takes a specific look at the microstructure of bank lending to SMEs in the post-consolidated banking sector in Nigeria, with specific focus on how lending decisions are taken at the micro-level (bank-level). The reason for studying the Nigerian banking system is to examine trends in the lending structures, practices and performance of banks in developing credit markets like Nigeria, applying well known methods used in empirical studies on SME lending across the developed credit markets. The Nigerian banking sector is one of the largest in Sub-Saharan Africa, with more than 12 banks listed in the top 1,000 banks in the world, the largest of any African country. This makes Nigerian banking sector a very important financial centre in the developing world and worth investigating. Some World Bank policy research papers and African Development Bank papers (e.g. Hesse, 2007; Beck et al., 2008a,b; Ayyagari et al., 2008, 2012; Calice, Chando and Sekioua, 2012; Berg and Fuchs, 2013) have revealed a number of interesting findings on the factors constraining lending to SMEs in sub-Saharan African countries. Previous studies on bank lending in Nigeria have only taken a macro view of the determinants of financial intermediation in Nigeria, but no study to the researcher's knowledge has taken a critical look at the microstructure of SME loan decision-making and the inter-relationships that exists among key determinants of lending. This is thus a major contribution of this thesis to the body of knowledge. For the purpose of this study, SMEs were defined as enterprises with total asset size not exceeding ₦500 million (~ £2 million and with employees between 11 and 300 (CBN, 2010). SME loans are therefore loans granted to firms of this nature, irrespective of loan size. The term 'SME Loans' refers to all kinds of credit facilities to SMEs, including term loans, overdrafts, commercial mortgages, lease financing and receivables financing (factoring).

The Rationale for Bank Finance for SME Borrowers

SME borrowers are faced with a plethora of financing sources ranging from debt finance, equity capital and venture capital finance. However, there is considerable evidence to show that bank finance is more patronised and hence a very important component of SME finance. In a National survey of Small Business Finance (NSSBF) carried out by the US Federal Reserve Bank in 2003, it was found that 86.5% of SMEs that required external finance obtained credit from commercial banks, which by far surpasses the share of other types of financial institutions (e.g. thrift institutions, credit unions, finance companies, etc) offering small business loans and other financial services (Mach and Wolken, 2006). The survey

classified small firms as those having net assets of \$25 Million or less. Larger firms tend to gain access to public capital markets by issuing commercial papers and bonds, whereas smaller firms usually find it difficult to access these other sources of credit, and hence become bank-dependent¹. According to the Annual Survey of Small Businesses in Scotland (2005), bank loans were the most often used source of finance (42%), followed by bank overdraft (26%). 11% of small businesses obtained a grant, and a further 9% used leasing or hire purchase arrangements, i.e. asset-based finance (pp.153). In more recent results from the BERR's Annual Small Business Survey 2007/08, it was found that of the number of UK SMEs that sought external finance, 46% resorted to bank loans, confirming the importance of Bank finance for small businesses (William and Cowling, 2009:09).

In Nigeria, however, a recent survey revealed that 80% of Nigerian SMEs are excluded from the financial markets (Sanusi, 2013). Since 2003, commercial bank loans to SMEs have been plummeting at an exponential rate. Analysis of the annual trend in the share of commercial bank credit to SMEs indicates a decline of about 7.5% in 2003 to less than 1% in 2006 and a further decline in 2012 to 0.14%. Notwithstanding the consolidation of the Nigerian banking industry since 2006, which means that Nigerian banks are now more capitalised and financially robust, the share of commercial bank loans to SMEs continues to decline significantly. Despite the positive effects of bank consolidation, Nigerian banks have tended to channel more of their loan portfolio to large corporates and multinational institutions, leaving the lower end of the market (i.e. SMEs) due to the latter's perceived riskiness and opacity.

A number of reasons have been identified for the poor funding of SMEs by commercial banks. These include lack of managerial capacity, inadequate collateral, poor record keeping and poor financial performance on the part of business borrowers, among others. On the supply side, banks face high transaction costs mostly due to regulation and the business environment and pass these costs on to borrowers. Lenders also lack understanding on the nature and operations of SMEs. Since Nigerian banks tend to focus on lending to large corporations and multinational companies, they devote less resources to building lending relationships with SMEs and hence garner less information on their SME customers. Moreover, the information environment on which the banks rely to make lending decisions is weak. For example,

¹ In recent times, however, small firms have been able to access credit from the dotcoms.

standard customer identification data and information on borrowers' credit repayment rates is inadequate and hardly accessed (FSS 2020).

1.2. Objectives of the Study

Given the above background, this research seeks to investigate the following questions:

- (1) What are the demand and supply side constraints to bank involvement with SMEs in Nigeria?
 - (a) What are the characteristics of SME borrowers which lenders consider important or influential when appraising SME loan applications?
 - (b) What are the characteristics of lenders and their external environment, which in turn influence their inclination to lend to SME borrowers?
- (2) What are the determinants of loan contract terms in Nigerian banks?
 - (a) What are the determinants of risk premium on SME loans?
 - (b) What are the determinants of loan collateralisation?
- (3) Of what economic value is relationship lending to banks in Nigeria?
 - (a) How do loan officers acquire and process soft information²?
 - (b) What are the benefits derivable from relationship lending based on soft information accumulation and personal touch by relationship managers?

² Soft information as used here and in this study largely refers to proprietary information (i.e. sensitive or marketable business information) privy to financial intermediaries having relationship and/or providing financial services to businesses. Soft information is obtained through social interaction of loan officers or relationship managers with their customers and from other local market sources. The financial and non-financial information that banks have of their customers are then synthesized to produce additional information on the credit worthiness or risk profile of business borrowers, which then helps in making lending decisions.

1.3. Significance and Original Contributions of the Study

Significance of the Study to SME Lending Stakeholders

This study primarily uses survey methodology to investigate the microstructure of SME lending decisions, practices and policies in Nigerian banks. It is hoped that the results of the study will be of interest to the stakeholders in the SME lending market, that is, *policy makers*, *bankers* and *small business borrowers* in Nigeria. First, SMEs are important to the Nigerian economy. They account for more than 70% of industrial employment and more than 60% of agricultural labour force (Lawal and Ijaiya, 2007). Thus, understanding the factors affecting lenders' decisions to lend to SMEs including the factors that affect the quantity and cost of credit available to SMEs is thus crucial for improving SME lending policies. Secondly, *participating banks* may especially benefit from this study as it might help respondent banks understand the profitability and economics of their lending methods, policies, and business models. In addition, they may understand the economic value/benefits of relationship lending to their bank. While preserving anonymity of sensitive lender information, the results of this survey may also assist respondent banks in benchmarking their lending performance with the industry average, hence helping to improve their competitive business strategy. Thirdly, it is intended that the results of this survey will also help improve the knowledge of *bank-dependent SME borrowers* in Nigeria with respect to understanding banks' requirements and expectations for loan applicants and users of loanable funds in order to better satisfy their banking and financial needs.

Original Contributions of the Study

Apart from the practical outcome of the research for banks, borrowers and policy makers, this study also highlights some academic contributions to the understanding of the subject of SME lending, which is an important area of bank lending that produces macroeconomic outcomes. In specific terms, the original contributions of this study lie in the following areas:

1. Contributions to the literature on the supply side of SME financing:

This study contributes to the literature on the supply-side of bank financing to SMEs. While many studies have already advanced our understanding of the demand-side of SME lending, only a few studies exist on the supply side of bank financing. Further, only a few studies have

taken a look at the relative influence between borrower characteristics versus lender characteristics in determining SME loan supply in Nigeria. In addition, the study uses survey data on Nigeria bank loan officers as against secondary data on bank lending, which do not properly capture the idiosyncratic effects of each bank and the microstructure of the banks' lending practices, business models and decision-making processes.

2. Contributions to the literature on the impact of bank size/lender size on SME lending:

This study is the only study to my knowledge that examines SME lending in Nigeria from the perspective of a post-consolidated and post-crisis banking sector in Nigeria. The study shows the impact of the 2006 consolidation in the Nigerian banking industry on lending volumes to SMEs post-consolidation in comparison with pre-consolidation levels, which is a contribution to the literature on bank size and the role of mergers and acquisitions on SME lending. Also, as the study period examined is the period since the 2008 crisis, the study can potentially be used for comparison purposes to show the impact of the crisis on SME lending.

3. Contributions to the micro-level aspects of SME lending:

Previous studies on bank lending in Nigeria have only focused on the macro view of the determinants of financial intermediation in Nigeria, but no study to my knowledge has taken a critical look at the micro-level aspects of loan decision-making and the inter-relationships that exists among key determinants of lending. For example, this study shows that there are significant differences in the lending behaviour of banks depending on a number of firm-specific, bank-specific and external factors. Within the firm-specific factors, this study shows that there are significant correlations between key SME performance indicators and between key indicators of borrower credit quality. Furthermore, within the bank-specific factors, the study also highlights significant relationships between idiosyncratic (bank-level) factors and between external (environmental) factors. To the extent that this research examines the role of these factors and how they interact together in determining the lending behaviour of banks, this thesis fills a major gap in the literature on the microstructure of bank lending to SMEs in Nigeria and hence represents a major contribution to the body of knowledge in credit research in Nigeria.

4. Contributions to the literature on the determinants of SME loan terms:

Not only does this study focus on the availability (i.e. quantity) of loans to SMEs in Nigeria, it also examines the determinants of the terms on which such loans are made, (i.e. interest rates and collateral requirements). Though previous studies in Nigeria have examined the determinants of loan contract terms, these studies only consider the cost of overall lending and do not focus on SME loans. The significance of this study is thus demonstrated by the fact that it is the first major attempt (to my knowledge) aimed at exploring the micro-level determinants of loan contract terms on SME loans in Nigeria. The study incorporates major theoretical works on loan pricing, collateral determination and the value of relationships in loan contracting.

5. Contributions to the literature on soft information acquisition and the role of loan officers in relationship lending:

This study examines the economic benefits of relationship lending and how loan officers in Nigeria acquire and process soft information. A number relationship lending studies (e.g. Petersen and Rajan, 1994 and Berger and Udell, 1995, among others) have tended to focus on the *borrower benefits* from relationship lending without due consideration to the role of loan officers in generating those benefits. It is the loan officers themselves that have direct contact with the bank's borrowers and are responsible for carrying out due diligence during the underwriting phase and monitoring the borrower after the loan has been disbursed. Thus, while some studies talk about the *bank-borrower* relationship, this study takes a look at the loan officer-borrower relationship (see Berger and Udell, 2002).

A significant contribution of this study is that by focusing on the activities of loan officers, we can analyse the underlying mechanism that drives the accumulation of soft information. Thus, in essence, this study addresses the fundamental issues of whether loan officers are central to soft information acquisition, and what value relationship lenders derive from soft information accumulation. In addition, this aspect of information acquisition in SME lending has never been studied for Nigeria and hence this study represents a novel contribution to the body of knowledge in this area in Nigeria and indeed Sub-Saharan Africa.

1.4. Formulation of Research Propositions

In line with the objectives of the study, one can explain the rationale for formulating the research questions and propositions of the study:

Proposition 1: *Bank lending to SMEs in Nigeria in the post-consolidated banking sector and in the post-crisis period is constrained by both demand- and supply-side factors.*

Numerous papers have examined the drivers of bank involvement with SMEs and the obstacles considered significant in constraining bank lending to SMEs (e.g. Fletcher, 1995; Cole et al., 2004; Beck et al., 2008b; de la Torre, Martinez Peria and Schmukler, 2010; Bruns and Fletcher, 2008). A World Bank survey on Nigerian firms' access to finance showed that most commercial banks are reluctant to provide long-term credit to SMEs (cited in Abosede and Arogundade, 2011). This is because of perceived risks and uncertainties. Lenders cite a number of demand-side factors plaguing the ability of SMEs to obtain bank finance. These include poor record keeping, absence of the appropriate managerial skills, inadequate collateral, and high risk of loan defaults, among other factors. However, there also exist supply-side issues such as high transaction costs, regulatory/market requirements, and lack of understanding by the banks of the nature and operations of SMEs. In addition, according to a recent World Bank policy research paper (Berg and Fuchs, 2013), lending to SMEs in Africa is largely driven by the structure and size of the economy, the degree of bank competition, the extent of government borrowing and extent of innovation mainly introduced by foreign entrants to financial sectors, and the state of the financial sector infrastructure and enabling environment. Thus, a good understanding of the interplay of these factors will help us comprehend the firm-specific (demand side), bank-specific (supply side) and external constraints affecting SME lending and how to improve on the performance of the Nigerian banking sector in the area of SME lending.

Proposition 2: *The determinants of SME loan contract terms in Nigerian banks are largely connected with the opacity and riskiness of SMEs, loan risk characteristics, bank-specific factors and the nature of bank-borrower relationships.*

SMEs in Nigeria, like in many low and middle-income economies, face financing difficulties because they are relatively young, inexperienced and informationally opaque. Most of them also lack good credit reputation and are exposed to huge operational risks especially from

changes in the external business environment (Ayyagari, et al. 2008). Many of them do not maintain proper accounting records let alone audited financial statements, thus accounting for the acute shortage of information between borrowers (themselves) and the lenders. Given these factors, when they eventually obtain credit from lenders, they do so at relatively high costs. The case for Nigeria is particularly worrisome because of the high failure rate of SMEs owing to operational and infrastructural deficiencies, which drives business costs higher, as well as the high incidence of loan diversion to personal uses especially among small scale agricultural producers and which poses great “moral hazard” risks to lenders. To mitigate these risks and ultimately align the incentives of the borrower with those of the lender, banks often decide not to lend, charge high interest rates to deserving borrowers and/or request for fixed collateral, and in almost all cases do so at the full amount of the loan. This study thus examines the micro-level determinants of the risk premium on SME loans and the incidence of loan collateralisation in Nigeria.

Proposition 3: *Relationship lending (based on information acquisition and personal touch by relationship managers) is of high economic value or significance to Nigerian banks*

A number of studies have highlighted the economic benefits and costs of relationship lending both to banks and to business customers (e.g. Diamond, 1984; Haubrich, 1989; Petersen and Rajan, 1994; Berger and Udell, 1995; Berlin, 1996; Levonian and Soller, 1996; Berlin and Mester, 1998; Cole, 1998; Petersen, 1999; Boot 2000; Elyasiani and Goldberg, 2004; Ergungor, 2005; Bharath et al., 2007; Peek, 2007; Benvenuti et al., 2010; Uchida et al., 2012). This study, however, focuses on the benefits of relationship lending to banks (e.g. in Levonian and Soller, 1996; Petersen, 1999; Boot, 2000; Bharath et al., 2007; Peek, 2007; Uchida et al., 2012 etc). In the wake of the crisis, most national governments (including Nigeria) have called for banks to return to the traditional banking model based on deposit taking and loan origination and spin off investment banking-related entities. There is an on-going debate between economic regulators and bankers as to the need to strike a balance between serving business customers better (through relationship banking) and delivering higher return on equity (ROE), the ultimate responsibility of the bank management to its shareholders and investors. It has also been argued that, in a competitive environment, banks would improve their competitiveness by establishing lending relationships with their SME customers (because SMEs prefer to have a close relationship with their banks rather than an impersonal, arms-

length relationship).

From the literature, the benefits of relationship lending to banks generally include: (i) *information efficiency in loan origination*: here the value of relationship is measured in terms of information adequacy and usefulness, screening ability or quality of lending decisions; (ii) *cost effectiveness of relationship lending*: This is measured by the unit cost of making a loan; (iii) *customer satisfaction*: Banks gain customer satisfaction from frequent and personalized contact with SMEs (v) *additional business*: The repeat business that banks enjoy from their business customers which is directly attributable to better customer satisfaction and the relationship lender's informational advantage over a non-relationship lender; (iv) *loan performance*: This is measured by ratio of non-performing loans to total loan portfolio and profit efficiency measures such as the rate of return on risk-adjusted SME loans.

1.5. Research Methodology

The methodology utilised by this study is **quantitative analysis of survey data**. According to Saunders et al. (2007), quantitative analysis refers to techniques that can be used to process or analyse numerical or quantitative data.

Data Collection

There are different possible data collection methods such as examining secondary sources, observation, questionnaire survey and semi-structured or unstructured interviews (Saunders et al., 2007). After evaluating all possible data collection methods, the researcher found that the most appropriate method that will provide practical answers to the research questions and stated objectives of the study was the use of a *questionnaire survey*. The use of a survey questionnaire is most ideal for this type of project because it allows for responses to be gathered in an articulate and standardised way and since the questions are interpreted the same way by all respondents (Robson, 2011). Other methods such as observation and in-depth interviews might be well suited for exploratory studies such as discovering customers' attitudes or opinions. Data for this study was also collected from secondary sources such as banks' annual reports, loan policy statements, relevant government/central bank publications as well as previous survey research/published works on SME financing (e.g. World Bank

research papers, and other development finance papers examining bank finance for SMEs in Africa). The justification for using additional secondary sources is that where primary data is unable to provide adequate and convincing evidence, secondary data sources will support and validate the findings.

Sampling Technique

The sampling technique adopted for this study is **purposeful sampling** (also known as **judgmental sampling**). Purposeful sampling is a non-probability sampling procedure in which the judgment of the researcher is used to select cases that make up the sample to enable him answer his research questions and meet his research objectives (Saunders et al., 2007). Such samples cannot, however, be considered to be statistically representative of the entire population. Patton (2002) emphasizes this point by contrasting the need to select information-rich cases in purposeful sampling with the need to be statistically representative in probability sampling. In connection with this need for sampling to be more representative, this study selected twelve of the largest Nigerian banks for the survey. These include: (1) Zenith Bank (2) First Bank (3) Guaranty Trust Bank (GTB) (4) Access Bank (5) United Bank for Africa (UBA) (6) Ecobank Nigeria Plc (7) Fidelity Bank (8) First City Monument Bank (FCMB) (9) Skye Bank (10) Diamond Bank (11) Stanbic IBTC, and (12) Union Bank of Nigeria. These 12 banks are headquartered in Lagos, the commercial capital of Nigeria. Together, these banks account for more than 77% of the market share of assets and deposits and they were among the only 13 Nigerian Banks listed in the Top 1,000 global banks in 2013 by the Banker Magazine (Omoh, 2013). The reason for excluding 1 of the 13 largest banks is that it is a foreign bank (Standard Chartered Bank), while the others are domestic banks, and including just 1 foreign bank together with 12 domestic banks will misrepresent the overall findings from the survey. Moreover domestic banks dominate the Nigerian banking system. By estimation, these 12 banks also provide more than three-quarters of the total loans to SMEs in Nigeria. The participants in the survey included loan officers, relationship/business managers who are either directly or indirectly involved in appraising SME loan applications and/or involved in disbursing, collecting or reviewing loans made by banks to SMEs resident in Nigeria.

A total of 249 questionnaires were distributed to relationship managers and loan officers spread geographically across 41 branches of the 12 banks in the Lagos Financial Centre, out of

which 121 were returned, implying a moderately high response rate of 48.6% compared to similar studies. For most academic studies involving top management or organisation's representatives, a response rate of approximately 35% is reasonable (Baruch, 1999). Saunders et al. (2007: 358) also report that a response rate of 30-50% for questionnaires delivered and collected is in fact normal. 56 respondents were loan officers serving low-end SME customers in retail branches, while 65 loan officers were domiciled in corporate/commercial branches. Using a 12-page questionnaire, a total of 30 broad questions were asked, which generated 166 variables in all. Questions asked related to how lending is organised at the bank level as well as the characteristics of borrowers and lenders, which influence the bank's willingness to lend to SMEs. It also includes questions on changes in lending policies/risk appetite since the global financial crisis of 2008-09. The questions asked were also connected to the determinants of SME credit terms, the role of loan officers in loan decision-making and the economic value derivable from relationship lending.

Data Analysis

This study also utilizes quantitative methods of analysis, including frequency distributions, descriptive statistics, ratio analysis, nonparametric statistics, and econometric testing of relevant relationships using ordinal logistic regression (OLR) models. The reason for the choice of ordinal logistic regression model over other conditional likelihood estimations such as the binary logit and probit models or the multinomial logit and probit model is that all the dependent variables are ordered outcomes. Where there are ordered outcomes exceeding two categories, with meaningful sequence (e.g. opinion surveys- strongly agree to strongly disagree; frequencies- never to always; ratings - poor to excellent, etc), OLR models become inevitable (Norusis, 2012; Katchova, 2013; Torres-Reyna, 2014). The stepwise regression procedure was also employed as part of robustness checks to test the quality of predictors used in the OLR regression models in the empirical chapters.

1.6. Structure of the Thesis

This thesis is divided into seven chapters, including this introductory chapter, two literature review chapters, three main empirical chapters, and a concluding chapter.

Chapter 1 provides the background, motivation and justification for the research.

Chapter 2 contains a full literature survey on bank lending to SMEs, beginning with the theoretical views on money creation and credit rationing by the new Keynesians and post Keynesians. It then proceeds to examine in detail the financing options for SMEs as well as the demand- and supply- side factors affecting banks' involvement with SMEs.

Chapter 3 contains a literature review specific to the Nigerian banking industry, looking at specific trends in bank lending to SMEs in the post-consolidated banking sector in Nigeria, including the role of government institutions and financing programmes directed at boosting commercial lending to SMEs.

Chapter 4 describes the research methods used in this study, including the data collection method and procedures, sampling techniques and methods of data analysis. The limitations of the study are also stated in this chapter.

Drawing from the content of chapter 2 and 3, the fifth, sixth and seventh chapters use survey data to investigate the lending criteria, decisions and practices of Nigerian banks with respect to SME loans as well as the effectiveness of the lending techniques used in making such loans.

Chapter 5 examines the relative influence between demand and supply-side factors affecting bank lending to SMEs in Nigeria, including the factors banks consider influential in determining whether or not to approve or reject an SME loan application, as well as the correlations and inter-relationships between key SME performance and risk indicators, indicators of credit quality, bank-level factors and external/environmental factors affecting SME lending in Nigeria.

Chapter 6 applies the contemporary theory of loan pricing in investigating the determinants of risk premium on SME loans and the incidence of loan collateralisation in Nigerian banks.

Chapter 7 explores the link between soft information acquisition and loan officer attributes/lending activities, and examines the benefits or economic value of relationship lending to Nigerian banks.

Chapter 8, the final chapter concludes the research and offers some policy suggestions to both Nigerian banks and the government. It also provides some future research agenda in the area of SME lending.

CHAPTER 2

BANK INVOLVEMENT WITH SMEs: DEMAND- AND SUPPLY-SIDE CONSTRAINTS

2.1: Introduction

The availability of bank finance to small and medium sized enterprises (SMEs) is an issue of topical debate among policy makers and practitioners around the world especially at this time of severe economic stress. SMEs play a significant role in the economies of most countries. In the UK for instance, there are over 4.8 million SMEs, accounting for more than 50% of employment and business turnover in UK³. In Nigeria, SMEs account for more than 70% of industrial employment and more than 60% of agricultural labour force (Lawal and Ijaiya, 2007). Since small firms are innovative, flexible and adaptive, they have been described as vital and crucial to the strength of the economy as a whole. Sadly, however, due to their small scale of operations, most do not have adequate access to financial resources. In addition, the quality of service they receive from their banks and the terms on which those services are provided are key elements in determining the success of this sector. SMEs tend to face financing difficulties because they are relatively young, inexperienced and informationally opaque. Most of them also lack good credit reputation and are exposed to huge operational risks. Given these factors, when they eventually obtain credit from lenders, they do so at relatively high costs.

Since the onset of the global financial crisis in 2007, many banks around the world have reduced lending to small businesses due to the so-called “liquidity squeeze” and the claim by bank managers that they cannot find high quality applicants. While on the one hand, some commentators (e.g. media, government) are of the opinion that banks (the supply side) are not adequately supporting viable businesses, bankers on the other hand, see the biggest driver of lending levels to be demand influenced by wider economic conditions and business confidence. Conventional wisdom teaches that the demand for bank loans naturally declines during a recession as businesses scale back on inventories and capital investment plans, while tending to build up cash reserves. Similarly, banks tend to tighten credit supply during

³ See HM Treasury (2010); see also Competition Commission, 2002, volumes 1-4 for details of a report on banking services to SMEs in UK.

financial crisis. Such a tightening in credit supply could be the result of a number of factors, including an increase in banks' cost of funds relative to the bank rate, or a reduction in risk appetite (Bell and Young, 2010). However, in the light of the recent financial crisis, quantitative easing (the process by which a central bank injects more money directly into the economy) has helped to ameliorate the consequences of higher cost of funds, credit constraints and the risk of very low inflation (Bank of England, 2009).

So the question remains, what is the relative influence between demand and supply in terms of the *availability* and *pricing* of loans⁴? It is worth mentioning that for Post Keynesians, the availability of credit is demand determined but this is subject to an assessment of the borrower's creditworthiness, while neoclassicals believe that credit is supply determined. The post-Keynesian theory of endogenous money creation presupposes that money creation in a modern economy is ultimately dependent on the demand for credit, and not the supply of credit as most mainstream economists say (Pilkinton, 2014). The Bank of England, in a recent paper (McLeay, Radia and Thomas, 2014), finally endorsed the post-Keynesian endogenous money theory, though there are still a number of debates on the relative role of money demand and supply in determining lending constraints. The paper explains that the majority of money in the modern economy is created by commercial banks making loans, a phenomenon that is contrary to the money multiplier theory found in most macroeconomics textbooks – which is that banks simply act as intermediaries, lending out savings deposits that customers place with them.

Generally, the decision to grant the loan requests of small firms is a function of several factors. On the demand side, factors such as firm and owner characteristics, loan characteristics, availability of collateral, as well as firm-lender relationship characteristics play crucial roles in lending decisions. On the supply side, some of the major determinants of the willingness and ability of banks to extend credit to SME borrowers are the effects of bank size as well as other banking market characteristics. There are also possible interdependencies between these set of variables. For example, the strength⁵ of the borrower-lender relationships has been found to

⁴ This study utilises a mix of primary and secondary data evidence to help to answer this question.

⁵ Berger and Udell (1995) used the length (duration) of borrower-lender relationship to measure the strength of relationship, while Petersen and Rajan (1994) utilised in addition to length other variables like the degree of a firm's use of non-loan related financial services as well as a measure of the firm's concentration of borrowing from a few lenders.

have significant effects on loan contract characteristics. Specifically, longer relationships were found to reduce loan rates and collateral requirements of banks (Petersen and Rajan, 1994; Berger and Udell, 1995).

Bank characteristics have also been found to have effects on loan pricing and maturity (e.g. Hubbard, Kuttner and Palia, 2002; Coleman, Esho and Sharpe, 2002). Research also shows that there are several factors that affect the use or non-use of the various lending technologies and therefore the extent to which banks lend to credit worthy transparent and opaque SMEs. Berger and Udell (2006) identify the financial institution structure and the lending infrastructure⁶ as key elements in determining the availability and quantum of credit supplied by banks to SMEs using different lending technologies. Financial institution structure implies the market presence of different classes of financial intermediaries that provide credit, as well as the competition among these institutions. Berger and Udell (2006) identify three major categories, namely: large versus small banks; foreign owned⁷ versus domestically owned and state-owned versus privately owned. A part of this review considers the dichotomy between large and small banks and excludes the latter two categories in order to keep the research focused on bank size features, which may exist in the country of study. There is also considerable evidence that market concentration can affect the supply of credit to SMEs (Petersen and Rajan, 1995). Other authors have raised concerns that the global consolidation of financial services namely through mergers and acquisitions can arguably have adverse effects - under certain market conditions - on the supply of credit to small businesses (e.g. Peek and Rosengren, 1995a; Levonian and Soller, 1995; Berger and Udell, 1996). This stems partly from the empirically negative association between bank size and allocation of assets to SME lending. Overall, recent trends in deregulation and technological changes have also fuelled significant changes made in SME credit availability. These factors have tended to favour large banks, with many of them expanding their scale and scope of operations both geographically and in product mix diversification with attendant effects on the future of SME lending.

⁶ The lending infrastructure refers to the rules and conditions provided mostly by governments or their regulatory agencies that affect financial institutions and their abilities to lend to different potential borrowers. According to Berger and Udell (2006), the lending infrastructure consists of three environments: (a) the information environment (b) The legal judicial and bankruptcy environment (c) the tax and legal environments.

⁷ Foreign owned banks are typically part of a large banking group, and as such they have similar characteristics as large banks. They have a wholesale orientation and may therefore be disadvantaged in small business lending.

The rest of this chapter investigates the literature on the various theoretical views on money creation and credit rationing (section 2.2). Next, the chapter examines the financing options available to SMEs (section 2.3), the demand-side or borrower factors affecting bank lending to SMEs (section 2.4) as well as the lender-specific and environmental factors constraining bank lending to SMEs (section 2.5). The chapter concludes in section 2.6

2.2. Theoretical Views on Money Creation and Credit Rationing

2.2.1. Loanable Funds Theory Vs. Post-Keynesian Endogenous Money Theory

In what appears to be an adequate explanation to how money is created in a modern fiat money system, the Bank of England recently published an article in its quarterly review published in March 2014 (i.e. McLeay, Radia and Thomas, 2014). This paper literally rejects the conventional theories of bank lending and money creation (e.g. those found in macroeconomics textbooks like Krugman and Wells, 2009; Mankiw, 2011) and seems to endorse the endogenous money creation theory of Post-Keynesian heterodox economists. One major misconception in most macroeconomics textbooks alluded to by the Bank of England is that banks act simply as intermediaries, lending out the deposits that savers place with them. According to this view, deposits are typically ‘created’ by the saving decisions of households, and banks then ‘lend out’ those existing deposits to borrowers, for example to companies looking to finance investment or individuals wanting to purchase houses. In fact, when households choose to save more money in bank accounts, those deposits come simply at the expense of money that would have otherwise gone to companies in payment for goods and services. Saving does not by itself increase the deposits or ‘funds available’ for banks to lend (McLeay et al., 2014). Thus in essence, viewing banks as simply intermediaries ignores the fact that commercial banks are actually creators of deposit money. The Post-Keynesian Endogenous Money theory presupposes that as financial intermediaries, commercial banks have the capacity to create money. By lending money that they do not directly possess, commercial banks are in effect issuing money. For example, whenever a bank makes a loan, it simultaneously creates a matching deposit in the borrower’s bank account, thereby creating new money. Though commercial banks create money through lending, their lending activities

are however limited by prudential regulations, which imposes constraints as a way of maintaining the resilience of the financial system.

Another area of misconception relates to the so-called “money multiplier approach” to the creation of money, which suggests that the central bank determines the quantity of loans and deposits in the economy by controlling the quantity of central bank money. According to this view, central banks implement monetary policy by choosing a quantity of reserves. And because, it is assumed that there is a constant ratio of broad money to base money, these reserves are then “multiplied up” to a much greater change in bank loans and deposits (McLeay et al., 2014). For this theory to hold, the amount of reserves must be a binding constraint on lending, and the central bank must directly determine the amount of reserves. According to the credit view of monetary policy, one channel through which changes in bank reserves (induced by open market operations) can affect real activity is by affecting the quantity of funds that banks have to lend (Bernanke and Lown, 1991). This is mostly achieved by varying the reserve requirements of banks. Higher reserve ratios reduce the quantum of funds available for onward lending, and vice versa. Though the money multiplier approach is particularly useful in understanding how the amount of reserves is determined, it does not describe how money is created in the real world.

In practice nowadays, rather than controlling the quantity of reserves, central banks typically implement monetary policy by setting the price of reserves – that is, the interest rates. According to Coppola (2014), the perception that the quantity of reserves created drives the amount of loans granted by banks is wrong. This is because banks’ decisions to lend are based on the availability of profitable lending opportunities at any given point in time. Lending is driven by the banks’ risk appetite. Banks lend when the risk/return profile is in their favour. When it is not, no amount of extra reserve creation will make them lend. Monetary policy therefore focuses on the price of money, not its quantity, since changes in the price of money will influence the returns available to banks for lending and therefore their willingness to lend. The Bank of England’s recent paper (McLeay et al., 2014) argues that the most important influence on money creation is the interest rate. It admits that monetary policy is the ultimate constraint on lending.

“The interest rate that commercial banks can obtain on money placed at the central bank influences the rate at which they are willing to lend on similar terms in sterling

money markets — the markets in which the Bank and commercial banks lend to each other and other financial institutions... Changes in interbank interest rates then feed through to a wider range of interest rates in different markets and at different maturities, including the interest rates that banks charge borrowers for loans and offer savers for deposits. By influencing the price of credit in this way, monetary policy affects the creation of broad money”. (McLeay et al., 2014:8)

The transmission mechanism of monetary policy described by the Bank of England does relate perfectly with both the New-Keynesian literature and the Post-Keynesian endogenous money theory. The Post-Keynesian literature, however, disagrees with the idea that the characterization of the setting of interest rates is the ultimate constraint to lending as the Bank of England posits (Pilkington, 2014). For post-Keynesians, the amount of money created in the economy is ultimately dependent on the demand for credit. Though the supply price of credit (that is, the interest rate) will influence the demand for credit, the experiences of the global financial crises over the last few years do show that what truly drives credit creation and the supply of credit is of secondary importance (Pilkington, 2014). Prior to the recent crises, most central banks operated a loose monetary policy: policy discount rates (including interest rates on large certificate of deposits CDs) were brought low, while other wholesale market funds and managed liabilities were exempted from prudential reserve requirements. In essence, banks were awash with liquidity so that evidence from the recent crises seems to refute the hypothesis that supply was constrained by shortage of loanable funds. Moreover, the lending boom that preceded the crisis was largely aided by the flow of cheap funds around the world, especially from Asian markets to the developed markets. However, from 2008, with the dramatic freezing of wholesale markets, this source of funding proved much less attractive. This has increased demand for other, more traditional funding sources, such as retail deposits, which in turn has increased the costs of banks raising funds to lend to something more like a historical norm (BBA, 2011).

2.2.2. Information Asymmetry and Credit Rationing

This sub-section presents two opposing views on the theory of credit rationing: the New Keynesian theory (or the mainstream view), pioneered by Stiglitz and Weiss (1981) and the

post-Keynesian view. According to the current new-Keynesian mainstream economic theory, asymmetric information is widespread in financial markets. It generates “adverse selection” and “moral hazard” effects (as described in this section below), which explain why credit rationing may persist even in liberalised financial markets. For the post-Keynesian view, both adverse selection and moral hazard are unlikely to be serious problems in reality, so that the Stiglitz and Weiss model is unrealistic (Paloni, 2014).

The New-Keynesian Theory - The Stiglitz and Weiss (S-W) Model

According to the New Keynesian theory of credit rationing, asymmetric information arises in credit markets between the borrower and lender when one of the counterparties (usually the lender) does not have sufficient information or knowledge of the other counterparty involved in the loan transaction, which makes it difficult to make accurate lending decisions. For example, a borrower who seeks a loan is believed to have better information about the potential returns and risk associated with the investment project for which the loan is sought than the lender does. In other words, the New Keynesian theory assumes that there is a precise probabilistic distribution of returns from each project that a potential bank borrower wants to undertake. This distribution is known by the borrower, but not by the lender. According to Stiglitz and Weiss (1981: 395), though the lender may know the expected mean return of a project, it cannot ascertain the riskiness of a project.

In market equilibrium, the presence of asymmetric information often leads to credit rationing among potential borrowers (Stiglitz and Weiss, 1981; de Meza and Webb, 1987; Berger and Udell, 1992; Petersen and Rajan, 1994). Banks making loans are concerned about the interest rate they receive on the loan and the riskiness of the loan. However, the interest rate a bank charges may itself affect the riskiness of the pool of loans in two ways, either by: (1) sorting potential borrowers (“adverse selection” effect); or (2) affecting the actions of borrowers *ex-post* (the incentive effect or “moral hazard”). Both effects derive directly from the residual imperfect information, which is present in loan markets after banks have evaluated loan applications (Stiglitz and Weiss, 1981).

The adverse selection aspect of interest rates is a consequence of different borrowers having different probabilities of repaying their loan. The expected return to the bank depends on the probability of repayment, so the bank would like to be able to identify borrowers who are

more likely to repay. It is difficult for the bank to identify “good borrowers”, and to do so requires the bank to use a variety of screening devices. One of such screening devices is the *interest rate* that a borrower is willing to pay: those who are willing to pay high interest rates may, on the average, be worse risks; they are willing to borrow at high interest rates because they perceive their probability of repaying the loan to be low. As the interest rate rises, the average “riskiness” of those who borrow increases, possibly lowering the bank’s profits.

Similarly, as the interest rate and other terms of the contract change, the behavior of the borrower is likely to change (“moral hazard”). For instance, raising interest rates decreases the return on projects that succeed. Higher interest rates induce firms to undertake projects with lower probabilities of success but higher payoffs when successful.

The Post-Keynesian Theory of Credit Rationing

According to post-Keynesian theory, asymmetric information is in practice not very significant, suggesting that neither the lenders nor the borrowers know the prospective yield of an investment project. In their view, credit rationing exists because borrowers and lenders have asymmetric expectations about the probability of repayment (Paloni 2014). Thus, why the New Keynesians on the one hand believe that only one party (the lender) is uncertain about the riskiness of the borrower, the Post-Keynesians on the other hand believe that both the lender and borrower are oblivious of the probability of loan repayment. In other words, they believe that there is *fundamental uncertainty* about the risks and possible outcomes of an investment project (Wolfson, 1996). This uncertainty is believed to affect the criteria that banks use in forming judgments about the risk of repayment. Bankers, knowing that they do not know the future, only rely on assumptions and certain conventions in their credit assessment. They then form an opinion of the likelihood of repayment. For example, borrowers who have a history of repaying loans on time and continue to maintain a strong financial condition will be preferred. Bankers also take into cognisance the prevailing macroeconomic conditions in making their assessment of the riskiness of a potential loan.

Post-Keynesians thus argue that with fundamental uncertainty, the past provides no dependable guide to future events. They argue that investment is subject to uncertainty and not risk (Paloni, 2014). For example, the outcome of an investment project depends upon future economic circumstances, future inventions, as well as the actions of future competitors. The

argument is that even if similar investments have been made in the past, the economic environment of a new investment differs from those of past investments. This is the probability theory upon which the post-Keynesians assume information asymmetry cannot be used in these circumstances because uncertain outcomes are not constrained to any known finite set of possibilities (Paloni, 2014).

Following from the concept of fundamental uncertainty, post-Keynesians also introduce the concept of *asymmetric expectations*, which suggests that both the lender and borrower will evaluate the future differently (i.e. they will reach different conclusions about the future) since they are both uncertain about the future, thus showing that they have asymmetric expectations about the future probability of any particular project (Wolfson, 1996). Since the borrower and lender do not necessarily agree on the riskiness of a particular project, credit rationing tends to occur based on this uncertainty. One implication of this is that the lender will be more risk-averse than the borrower. In line with a Post Keynesian perspective of credit rationing, Wolfson (1996) argues that bankers accommodate all credit-worthy demands for credit, and ration all those demands not deemed creditworthy. According to him, a perceived change in the financial condition of bank borrowers will be likely to change bankers' conventional valuations of the risk of lending, and thus the extent of credit rationing. As Minsky (1986) argues, this change in valuation takes place endogenously. According to him, financial fragility increases as borrowers take on more debt, as the maturity of that debt shortens, and as liquidity declines. These borrower risk characteristics are examined in detail within the context of SME lending in section 2.4.1. Next, this chapter considers the financing options available to SMEs.

2.3. Financing Options For SMEs

SMEs generally follow a *pecking order* in their quest to raise external finance, i.e. they start with cheaper sources of funds and then graduate to costlier financing sources. Apart from internally generated cash flows such as retained earnings, capital from proprietors and financial support from families and friends for start-ups, small businesses find debt finance one of the relatively cheapest means of raising funds for their operations. Bank credit is an extremely convenient form of finance for the firm that has a good relationship with his banker

(Bates and Hally, 1982). Debt finance may be preferred to equity finance because it does not dilute share ownership. Moreover, it is less likely to transmit control over the business, except in instances where loan covenants and other contractual terms may cede a sizeable level of control to external creditors (Berger and Udell, 2003). Debt finance may also reduce verification costs because outside creditors will have to bear the cost and time of monitoring the company's cash flows or project returns in the event that debt repayment is not forthcoming or is not paid in full. Optimal financial arrangements such as loan covenants and other debt contracts will help to reduce monitoring costs and exert corporate control over managers of the borrowing firm.

A borrower's choice of financing sources is likely to be a function of its 'credit history' and its 'investment opportunities' (Bhattacharya and Thakor, 1993:7). According to Diamond (1991), new and inexperienced borrowers without a verifiable reputation prefer to borrow from banks, while older firms with well-established reputation choose the capital market. Rajan (1992), however, argues that when borrowers anticipate huge profitable project returns in the future, they prefer arm's length⁸ (direct) financing. In other words, while Diamond's view that the borrower's reputation is a key factor in the choice of financing source is 'retrospective', Rajan's prediction is rather 'prospective' (Bhattacharya and Thakor, 1993:38), i.e. dependent on future investment returns. In essence, it can be noted that the decision of a firm to choose to access funds from the capital market arises from the firm's financial growth life cycle. Many *de novo* firms use bank finance initially to gain credibility or build public image before accessing capital markets as they become more profitable.

Another interesting argument in the literature focuses on the conflict between debt and equity holders (see Campbell, 1979). Here, small high-quality, innovative firms tend to prefer (bilateral⁹) bank finance to equity finance because they want to avoid the disclosure of private information to product market competitors or to third parties¹⁰. Yet Campbell's framework

⁸ Arm's length debt here refers to financing sources which do not entail huge disclosure costs aside from publicly available information e.g. bondholders (See Rajan, 1992)

⁹ Bilateral financing is often characterised by a close relationship between a borrower and a lender and where because of this intimacy the lender does not require the borrower to disclose as much verifiable information to be able to access credit. Thus bilateral financing is less costly.

¹⁰ Interested third parties may be a regulator, the tax authority, or even the firm's own labour union (See Rice, 1990)

does not take into account the risk of conjecture on the part of interested third parties when they discover that a bank loan has been granted (see Yosha, 1995). There can be scenarios particularly under multilateral¹¹ financing arrangements, where the private information of a borrowing firm could be disclosed by a bank to a product market competitor who has borrowed from the same bank. In fact, most models ignore the possibility of this kind of tensions between the issuers of securities, on the one hand and third parties on the other hand. This is especially the case with Diamond (1991) and Rajan (1992) where, since monitoring and control rights are of meagre importance to low risk firms, they may prefer (less informed) arm's length debt to (informed) bank finance.

It is possible for a borrower's financing choice to be adversely affected by information leakages. Firms whose probability of success cannot be ascertained when they invest in private knowledge-producing activities (i.e. R&D) might as well find multilateral financing more beneficial to bilateral financing since it is baseless to try to shield their proprietary information from the public. Conversely, if firms can significantly influence their chances of making profits, they may find that because of free riding by competitors, multilateral financing may not be a viable option (Bhattacharya and Chiesa, 1995; Yosha, 1995)

Another potential source of finance for SMEs is venture capital (VC). It is hypothesised that the most inexperienced borrowers who lack managerial skills resort to this type of capital (e.g. Chan et al., 1990), while those who can convince investors of their managerial skills but lack credit reputation tend to approach banks (e.g. Bhattacharya and Thakor, 1992). Larger firms who are both skilled in management and have a reputation for creditworthiness opt for capital market financing. It has been argued that small firms tend to be heavily reliant on bank finance as opposed to venture capital for a number of reasons: First, there are huge fixed costs associated with arranging venture capital finance and this may not be readily affordable by small firms (e.g. Cowling, 1998). Most venture capital firms may not even be willing to admit small risky businesses and incur huge operational costs (e.g. Harrison and Mason, 1986). There is also considerable evidence of the increasing unwillingness of small firms to dilute equity ownership to outsiders and thus risk losing their autonomy and control (e.g. Dow, 1992).

¹¹ In contrast to bilateral financing, multilateral financing requires borrowers to disclose as much information as possible, and even to be audited to be able to convince lenders that they are credit worthy.

2.4. Demand-Side Factors Affecting Bank Lending to SMEs

A number of demand-side factors affect the supply of bank loans, including: *firm* and *owner* characteristics, *borrower-lender relationship* characteristics as well as *demand-side market failures*. This section now reviews all of them in detail.

2.4.1. Firm Characteristics

Generally, lenders are willing to extend credit only when they have high expectations that the borrower is able to repay. The less a banker knows about a firm, the more information the firm must provide to be able to make a convincing case for receiving a loan (Barrett, 1990). Thus, banks are likely to favour borrowers that exhibit characteristics that assure the bank of the chance of being repaid. Sadly, however, most small businesses suffer disproportionately from adverse selection because they are both more reliant on external finance and relatively more opaque than older and larger firms.

Firm Size

A firm's size is usually measured in different ways, most notably, asset size, annual sales or turnover. It is expected that a larger firm will be more credit worthy because it is well established and typically more diversified than a smaller firm so that it is more likely to be approved for a loan (Cole, Goldberg and White, 2004; Cole, 2008). On the other hand, it is generally believed that smaller firms are more prone to insolvency than large firms because they are usually less diversified on the production and distributions side and are more likely to face financing constraints (Behr and Guttler, 2007). This notion is taken into consideration by banks that do not grant credit to high-risk borrowers.

Firm's Age/Transparency

A borrowing firm's age could affect the inclination of lenders to extend credit to it. Older firms are thought to be more credit worthy because they have an established track record and are relatively stable and less risky. They are also less opaque and relatively easy for a lender to scrutinise and monitor. Empirical evidence shows that large banks tend to be attracted to older, more established and financially stable firms (Haynes, Ou and Berney, 1999). Transparency on the other hand, has to do with the availability of financial records and/or audited financial statements. It is expected that a firm that has good financial records will be able to convince a

bank of its ability to repay a loan. Incidentally, most young SMEs suffer financial constraints because they are more informationally opaque than older and large firms. A business is said to be opaque if outsiders (e.g. creditors, competitors, investors or rating agencies) cannot easily determine its quality or ascertain its credit worthiness and hence its likelihood to repay a loan given these information asymmetries (Hyytinen and Parajarinen, 2008).

Banks, especially large ones, rely hugely on audited financial statements as an important piece of information in commercial lending decisions. Since large banks rely more on hard information than do small (relationship) banks, they are more likely to approve loans for firms with better financial records (mostly in the form of audited financial statements), and these have often been proved to be relatively older and more transparent firms (Haynes, Ou and Berney, 1999; Kim, 2008). In other words, large banking institutions tend to lend to relatively transparent and safer borrowers that are likely to earn transactions credits. On their part, small business borrowers may find it prohibitively expensive to engage the services of auditors and hence are attracted to smaller (relationship) banks that rely mostly on non-financial information in order to accommodate the opacity of the small business borrower.

Firm Profitability/Financial Performance

The past financial performance or profitability of a firm is an important indicator of its ability and capacity to repay a loan (e.g. Berry et al., 1993). Profitability is usually measured by the firm's *return on assets (ROA)* or *return on equity (ROE)*, among other measures. Lenders generally expect that a firm with greater profitability will be able to demonstrate ability to service its debts out of its earnings. According to Bruns and Fletcher (2008:13), "past profitability shows the firm's past operational success and thus provides tangible representations of the competence of the SME". A company is able to demonstrate its ability to repay a loan through the strength of its financial statements. According to Berger and Udell (2003, 2006), there are two important ingredients to the use of financial statement lending technology. First, the borrower must have informative financial statements (e.g. audited statements prepared by reputable accounting firms according to widely accepted accounting standards such as GAAP or IFRS). Second, the borrower must have a strong financial condition as reflected in the financial ratios calculated from these statements.

The main purpose of accounting information is for lenders and other potential investors to make rational financing decisions (Kam, 1990). Financial ratios calculated from financial statements (e.g. cash flow, profit/loss and balance sheet statements) have been found to be reliable predictors of corporate bankruptcy by some notable researchers (e.g. Beaver, 1967, Altman, 1968, 1993; Ohlson, 1980), which indicate their importance in the prediction of credit defaults. Therefore, information on past financial performance (obtained from financial ratios) allows banks to assess the creditworthiness of a particular firm. Although a loan contract may have different contracting elements, including collateral, personal guarantees and/or loan covenants, the lender will view the expected future cash flow of the company as the primary source of repayment. Any unanticipated defaults will then be compensated for by other mitigants such as collateral and guarantees.

Financial Stability (Leverage and Liquidity)

A major concern in SME lending is the lack of an adequate equity stake or enough retention of earnings to boost equity (Hutchinson and McKillop, 1992). Two main determinants of financial stability for businesses are *leverage* or *gearing* and *liquidity* or *cash flow*. There are two measures commonly used in the empirical literature for measuring leverage: the *ratio of debts to assets* or the ratio of *debt to equity* (see Berry et al., 1993 and Cole et al., 2004). Bankers often use the latter where the owners' equity stake or retained earnings is considered important. Berry et al. (1993) however, show that the calculation of the gearing level of businesses is not straightforward as the basis of usage is not common among all banks or bankers. In some cases, gearing is referred to the business as a whole, while in other cases a banker might consider the gearing of the particular lending proposition. There have also been cases that showed that what may have been an acceptable level of gearing to a banker when the lending was within that banker's mandate was less acceptable if the request had to be referred to a more senior level (see, for example, Dewhurst and Burns, 1989:104). However, according to Berry et al. (1993), four factors seem to influence the acceptable norms with respect to leverage (1) the size of business and the stage of its development, (2) the purpose of the borrowing (e.g. working capital or project finance), (3) the type of finance required (whether short term or long term), and (4) the type of business. The bottom line here is that highly leveraged firms are riskier and have greater chances of defaulting on a bank loan because huge levels of indebtedness affects their ability to service their debts or even retain

earnings. Cole et al. (2004) found that these firms are however more likely to apply to larger banks who can hold riskier, yet more profitable asset portfolios.

The second measure of financial stability is the *firm's liquidity*. This is usually measured by the ratio of a firm's *cash assets to total assets*. Firms with more liquid assets are generally thought of as being credit worthy since they can convince lenders of their ability to meet their current financial obligations (Cole, 2008). A banker can assess the borrower's liquidity level by monitoring the flow of funds in and out its bank accounts (Berry et al., 1993; Nakamura, 1994). This sort of monitoring tells a great deal how the business managers are managing its working capital. It also "provides the early warning system for potential problems" and is also used to form judgements on the ability of the SME owner to run the business profitably (Berry et al., 1993:146). On the link between a firm's liquidity and the type of lender, Cole et al. (2004) finds that firms with more liquid assets tend to apply to larger banks. This is perhaps due to the fact that they are able to obtain larger loan amounts from large banks.

Firm's Organisational Form

A firm's organisational form (i.e. whether it's a *sole proprietorship, partnership, limited company or limited partnership*) might matter in the lending decisions of banks. The degree of informational asymmetry and the magnitude of agency conflicts between owners, managers and creditors are likely to vary with organisational form (Cole, 1998). Moreover the nature of a firm's liabilities is also likely to be a function of its organisational form. Typically, proprietorships or non-corporate institutions are assumed to be more credit worthy than partnerships and corporations, *ceteris paribus*, because a lender can liquidate or sell both the personal assets and business assets of the owner to fulfil a claim (Berkowitz and White, 2004). In the same vein, a lender might prefer to lend to a partnership other than a corporation as it can lay claims to the general partner's personal assets in the event of a default (Cole, 2008). It is expected that smaller banks would lend mostly to proprietors and partnerships while large banks will lend mostly to larger firms and corporations. This therefore seems to indicate precisely the existence of correlation with size.

Nature of Business of firm's Industrial Sector

Anecdotal evidence shows that a “firm’s sector of activity or industrial classification is often used by bankers to evaluate a firm’s credit quality” (Cole, 1998:964). In other words, bankers presume that there are certain sectors or industries where the borrowers are less likely to default on a loan. If this is the case, banks may withdraw from funding certain other sectors even when they are faced with financial difficulties. A firm’s industrial classification could also give an indication of the type and maturity of the financing source¹² it requires. Typically, high-growth and non-high growth firms attract different funding preferences from lenders. For example, small firms in the computer and software development and services sector or firms that invest hugely on R&D are seen as high-growth firms. High growth firms usually do not have adequate internal finance to fulfil their business needs and are therefore prone to raising external finance. It is contended that though large banks are generally less attracted to small businesses, they however prefer to lend to small hi-tech and super-growth¹³ firms.

Firm's Credit Rating

A firm’s credit rating, as determined by previous loan repayments or number of delinquencies is a crucial factor in influencing a lender’s decision. Number of delinquencies is the number of business credit obligations on which the firm has been delinquent within the past three years. Business delinquencies are a negative function of the likelihood that a lender will extend credit to the firm (Cole, 1998, 2008; Cole et al., 2004).

2.4.2. Owner Characteristics

The literature shows that the decision of banks to grant credit to small businesses is also largely dependent on the reputation of the owners as measured by their age, educational attainment, business experience, physiological characteristics (e.g. race, ethnicity, gender), personal wealth and delinquencies.

¹² Research has shown positive relationships between the use of long-term debt and sectors such as retail, distribution, hotel, catering and ‘other manufacturing’ sectors (Bhaired, 2010:63).

¹³ Super-growth firms refer to firms that have consistently high growth rates and whose annual growth rates are in excess of 30% (See 2007 Survey of SME finance by Cosh, Hughes, Bullock and Milner, 2008)

Owner/Entrepreneur's Credit Rating

Business owners or entrepreneurs with bad credit history will find it more difficult to obtain working capital loans. An entrepreneur's credit rating can be measured by *number of delinquencies*. This represents the number of personal credit obligations on which the principal owner has been 60 or more days delinquent. Banks should be less inclined to lend to firms whose owners have had a great deal of delinquencies (e.g. Cole, 1998, 2008; Cole et al., 2004).

Owners' Educational Attainment

This is measured by *academic qualifications or other professional training* and usually takes the following order: high school, college degree, graduate degree or post-graduate degree. Firms with more educated owners are thought of to be credit worthy as they will bring their knowledge and skills to bear on the fortunes of the company. In an empirical study by MacRae (1991), it was found that the major distinguishing feature between high growth and low growth small firms was the education, training and experience of the senior managers and owners. Small firm owners with strong managerial competences are also likely to attract, develop and retain workforce with strong managerial talent (Martin and Staines, 1994) and this would impact on the company's financial performance.

Owners' Business Experience

The quality of the human capital of the people working in the SME is a critical factor influencing the likelihood that the business is able to grow successfully (Dess and Picken, 1999). Firms with more experienced owners are thus generally assumed to be more credit worthy than younger entrepreneurs because of their expertise in the firm's area of business. In a survey of Scottish bank managers on their lending practices to small businesses, Fletcher (1995) found that trading experience of the borrower is rated the most important factor for lending to small businesses. In order for lending officers to be able to extend credit on a particular project, they will need to ascertain that a borrower has the capability and a positive track record of successfully managing a similar project in the past or a project that requires comparable competence, know-how and technical skills to the new project under consideration (Bruns and Fletcher, 2008). Borrowers that are able to demonstrate competence or a positive

track record are likely to get a favourable decision from the lending officers (Sargent and Young, 1991; Scherr et al., 1993).

Owner's Equity Stake/Contribution

According to Bruns and Fletcher (2008), the probability that a lending officer will support credit extension to a borrower will depend on the share of the investment the owner has in the borrowing firm. Due to the combined role of management and ownership, the owner-manager has both financial and human capital at risk in the firm. Lenders sometimes require small business borrowers to make cash contribution of a certain percentage of the loan amount, so the borrowers can demonstrate that they will act in the lender's best interest. Mishkin (2010:184) calls a debt contract of this nature "incentive compatible", i.e. where the borrower's incentive is aligned with that of the lender. Equity stake is important from the point of view of gearing and showing commitment by the owner (Fletcher, 1995). Equity stake suggests that the track record of the owner (s) of the business is critical as an indication that they have the ability to utilize the loan for the purpose for which it was initially contracted.

Owner's Personal Wealth

The wealth of firm owners is likely to play a key role in determining the allocation of credit to small firms where personal commitments are pre-requisites for obtaining credit, i.e. where borrowers pledge their personal assets as collateral against the firm's borrowings and/or make personal guarantees in order to be able to reduce the risk of lending (Avery, Bostic and Samolyk, 1998). Owners with greater personal assets and higher income should be able to negotiate credit terms better as they can demonstrate good prospects to the bankers or sufficient ability to repay a loan.

Owner's Physical/Social Characteristics (e.g. Age, Gender, Race, and Nationality)

Firms with older owners are usually thought of to be wiser and to have more experience or track record of credit-related transactions than young owners and are therefore more likely to be given preference. Some bankers are also gender-bias in their lending practices. Firms whose controlling owners are female usually face more stringent credit requirements than males (e.g. Bellucci, Borisov and Zazzaro, 2009). Owners' race/ethnicity is also a very important factor in assessing banks that practice race-based discrimination. The victims are

usually loan applicants from minority ethnic groups such as Black Africans, Hispanics and Asians (e.g. Blanchard, Zhao and Yinger, 2008). In fact, using data from the 1993 and 1998 National Surveys of Small Business Finances to examine the existence of racial discrimination in the small business credit market, Blanchflower, Levine and Zimmerman (2003) find that black-owned small businesses are about twice as likely to be denied credit even after controlling for differences in creditworthiness and other factors.

2.4.3 Firm-Lender Relationship Characteristics

The borrowers' chances of accessing bank finance are partly dependent on the existence of previous relationship with the lender. This sub-section examines how credit is constrained by the existence or non-existence of prior relationships with the lender as well as the strength of such relationships. Firms that have pre-existing relationships with their prospective lenders are likely to be favoured to receive credit because it is expected that over the course of these relationships, the lender would have garnered sufficient information about the credit worthiness of the borrower. Cole et al. (2004) identify three types of pre-existing relationships:

Deposit Relationship

It is expected that banks should favour firms that have a pre-existing deposit account (checking or savings) at the bank. Nakamura (1994) and Boot (2000) note that through the checking and savings account information of local customers, banks are able to ascertain the credit worthiness of their loan applicants. Cole et al. (2004) also notes that banks would most likely grant loan requests made by firms with pre-existing deposit relationships for fear of losing them to their competitors because of the loan denial.

Loan Relationship

The lender is likely to favour applicants that have had a pre-existing loan relationship with the bank. However, the effect of this relationship is rather ambiguous. This is because the lender might be worried that a pre-existing loan clearly increases the firm's leverage, *ceteris paribus* (Cole, 1998). In addition, if a bank grants a second loan application to a borrower, it might

signal concerns about the bank's portfolio diversification and a possible violation of regulatory restrictions on lending to a single borrower.

Financial Management Relationship

Like deposit relationship, it is expected that a firm with a pre-existing financial management relationship with the bank will have greater chances of receiving a loan. Financial management services used by SMEs include *transaction services* (the provision of paper money and coins, credit card and debit card processing, night depository, and wire transfers); *cash management services* (i.e the provision of liquid asset & interest-bearing accounts), and *credit-related services* (including the provision of loans, trade credit and capital leases; letters of credit, bankers' acceptances and factoring). Other financial management services include *brokerage and trust services* (pensions, business trusts and safe keeping of securities (Elliehausen and Wolken, 1990; Cole, 1998; Mach and Wolken, 2006). These services are typical of all types of banks. However, one would expect applicants to larger banks to have had a pre-existing financial management relationship.

Even if a relationship exists between the borrower and the lender, the strength of that relationship is also crucial in determining whether a borrower will get a loan or not. For the purpose of this analysis, the strength of a borrower-lender relationship will be measured by the following factors:

The Length and Exclusivity of Relationship

The length of a firm-bank relationship and the number of sources of financial services a borrower deals with are important determinants of credit decisions. The longer the relationship between a firm and a lender, the more time the potential lender has to acquire and develop proprietary information about the applicant (Cole, 1998). Large banking institutions are found to have temporarily shorter and less exclusive relationships with their business customers (e.g Berger et al., 2005) owing mainly to competition from other financial service providers. Since large banks tend to have weaker relationships with borrowers, they tend to employ more transactions lending approaches. On the contrary, the relationship between banks and firms tend to be long-lived and more exclusive when the firm in consideration borrows from a small bank. This confirms the assertion made by Rajan (1992) that small firms tend to be tied to banks that have accumulated soft information on them over time. The reason why small firms

are unlikely to switch banks is that soft information is exclusive to the bank they are dealing with and as such is not easily transferable across banks. On the other hand, a firm dealing with a large bank is likely to find that the additional benefits of staying with the same bank or the costs of switching to another lender is low (Berger et al., 2005: 245). However, it could be argued that this might not be the case if the firm is considerably small.

Distance¹⁴ and Mode of Interaction¹⁵:

Large banks tend to develop more impersonal and longer distance relationships with their SME loan customers. This is consistent with the view that large banks rely less on soft information that is acquired mainly through personal contact with customers and by observation. (Berger et al., 2005:240). By contrast, because small banks deal with informationally opaque firms, they tend to be more susceptible to the “*shoe-leather*” cost of personal visits (*ibid*: 245). However, the fact that large banks deal with customers at an impersonal level does not imply that they are incompetent in dealing more at a personal level, but because the nature of the firms they deal with makes personal contact unsuitable.

Effects of Relationships on the Availability and Terms of Credit

So far, it has been argued that banks that are able to build stronger and lengthier relationships with small firms are better able to acquire soft information, which then helps them to assess the credit worthiness of borrowers. How do these stronger relationships translate into more financing? The problem of measuring the availability of credit cannot be easily ascertained from the books of small firms, as this might reveal a combination of both demand and supply side effects. However, Petersen and Rajan (1994) suggest an alternative approach whereby the degree to which a firm relies on trade credit can be used to ascertain the extent to which it has been credit constrained and hence gives a signal on the firm’s source of bank finance. Under this model, if a firm pays a greater proportion of its trade credit late (that is, after the due date), it gives a reliable indication that the firm in question might have been rationed so that we

¹⁴ Distance refers to the physical (linear) space between the applicant firm’s address and the address of the bank branch with which the firm trades.

¹⁵ Mode of interaction can be classified into personal and impersonal. Personal Interaction is simply characterised by the banker’s face-to-face contact with the customer, while impersonal contact is characterised by a greater use of mails and phone calls in communications instead of face-to-face contact.

conclude that the firm must have borrowed from a large bank. In other words, since credit rationing among informationally opaque firms increases as bank size increases, it is expected that a small firm that borrows from a large bank will be more prone to credit rationing. Older and larger firms are arguably less constrained by banks and hence are likely to pay less of their trade credit late. In the same vein, firms that have built long-term relationships with their banks are also likely to pay less of their trade credit late (Berger et al., 2005:260).

The length of borrower-lender relationships can also influence the setting of loan contract terms. Boot and Thakor (1994) show that when lenders and borrowers engage in repeated interactions through time, they are able to build trust and credibility, which help to reduce moral hazard problems. Banks that have gathered proprietary information over their clients often use this information in refining contract terms offered to borrowers. Berger and Udell (1995) in their study of the role of relationships in determining both price and non-price contract terms of bank lines of credit extended to firms find that longer bank- borrower relationships reduce the interest rates paid by borrowers and the chances that they will have to pledge collateral¹⁶. To the extent that this occurs, longer duration of banking relationships relaxes the terms of a loan, ameliorates credit constraints and hence raises firm value. More analysis on the economic importance of relationship lending is provided in chapter 6.

2.4.4. Demand Side Market Failures

There are also market failures affecting the demand side for businesses seeking finance. These come in the following forms:

Availability of Marketable Collateral

The use of collateral is a common feature of loan contracts between firms and lenders. Collateral requirements either in the form of business or personal assets are used to reduce the risk of lending which is caused by the presence of asymmetric information, adverse selection and moral hazard. In collateralised lending, the borrower undertakes to relinquish ownership

¹⁶ According to Boot Thakor and Udell (1991), collateral is an alternative to trust and by developing relationships, it is expected that collateral requirements would be more relaxed. Jimenez, Salas and Saurina (2004) also found that the likelihood of collateral is lower in more concentrated credit markets and for loans made to borrowers with longer relationship with the lender that grants the loan.

of a valuable asset to the lender if he or she fails to repay a loan. If the borrower defaults on the loan, the lender reserves the right to seize, sell or liquidate the asset and use the proceeds to offset the loan. Nakamura (1994:8) argues that, “because the lender has recourse to the collateral, the borrower has a strong incentive to repay the loan in full¹⁷”. In this sense, according to Voordeckers and Steijvers (2006), collateral may play a disciplinary role in the behaviour of the borrower. Yet most small business borrowers, especially young and inexperienced firms with low credit quality, do not have access to acceptable forms of collateral, such as real estate, cash and other liquid assets. As part of efforts to solve this problem in the UK, the UK government introduced the *Enterprise Finance Guarantee Scheme (EFG)* in January 2009 to provide a 75% guarantee on individual loans made by participating banks to small companies with turnover less than £25 million.

Strength of Borrowers' Balance Sheet

During a recession, slow down in lending levels could be explained by the generally weak state of borrowers' balance sheets (Bernanke and Lown, 1991). For example, many borrowers significantly increased their leverage during the few years prior to the build up of the recent crises, while falling prices for real estate and other assets have adversely affected potential borrowers' net worth. Further, the recession has put additional pressures on cash flows. For a given set of ultimate investment opportunities, borrowers who are less creditworthy (such as those who have higher leverage or lower collateral) will have a lower effective demand for external finance at given values of the safe real interest rate. Thus, it may be that in the recent downturn the normal recessionary decline in credit demand has been exacerbated by a greater-than-normal decline in the creditworthiness of potential borrowers.

Information Market Failures

There are information market failures affecting the demand side for businesses seeking finance. SMEs may not fully understand the potential benefits to their business of raising finance or their likely chance of success in gaining finance, which ultimately means they do not apply for finance. This may restrict the growth of businesses. Survey evidence shows a

¹⁷ However, it should be noted that there are huge transaction costs involved with administering the sale of a collateralised property. Moreover, in some cases the value of the collateral may have diminished beyond the amount borrowed. Thus the gains to the lender might be unobtrusive (Cole et al., 2004).

small but significant proportion of SMEs are discouraged from applying for finance because they think they will be rejected (BIS, 2012). The November 2011 SME Finance Monitor survey in the UK estimates around 40% of would be seekers (12% of all SMEs) are discouraged, and this is equivalent to around 5% of all SMEs that are discouraged from applying for external finance (BDRG Continental, 2011).

Business Confidence

A lack of investment readiness also leads to SMEs lacking the ability to present themselves as investable opportunities, for instance due to *inadequate management skills* or *poor business plans* (BIS, 2012). For instance, according to the 2011 SME Finance Monitor, only 25% of SMEs in the UK have a formally qualified financial manager, although this increases with the size of business to 66% of medium sized businesses (BDRG Continental, 2011). This may reflect why 41% of SME employers do not understand the way banks assess business credit risk, and why they do not feel confident in raising finance. A greater number of SME employers perceive they are poor (38%) at accessing finance compared to those reporting they are strong (25%). However, most SMEs do not seek advice when applying for finance, with only 9% of SMEs seeking advice when applying an overdraft and 20% of SMEs seeking advice when applying for a loan (BDRG Continental, 2011).

Poor Quality of Projects

Another similar ‘demand side’ constraint has to do with the quality of projects submitted for financing, which often falls short of the minimum standards. It is worth mentioning, however, that the poor quality of projects is frequently invoked as an excuse by conservative bankers not to extend lending to SMEs (Zavatta, 2008). Although it is not easy to come by potentially viable projects, the issue of the quality of projects is a problem of perception.

Inability to Exploit Existing Opportunities

Notwithstanding the intrinsic quality of the projects being considered for financing, bankers are also concerned that business promoters are often unable to make the best use of available opportunities. This relates not only to their limited ability to convincingly articulate their business ideas, but also to the unwillingness of many small-scale entrepreneurs to ‘waste time’ in dealing with financial institutions (Zavatta, 2008). Sometimes, business owners are

unwilling to commit to building a strong relationship with bankers unless their business proposals are first considered for financing. In fact, many small businesses often quickly consider the option of switching to other financial service providers once they are unsatisfied with the level of funding they get from their existing bankers. The costs of switching to other financial service providers is, however, huge, when considering the extent of proprietary information that has been acquired by the bankers over time as well as the costs of building new relationships with new financial service providers.

2.5. Supply-Side Factors Affecting Bank Lending to SMEs

Supply side behaviour towards small business lending is mostly driven by (1) *the risk and cost factors associated with lending activity*, (2) *financial institution and market structure*, (3) *lending technology* and (4) *the lending infrastructure*.

2.5.1. Risk and Cost Factors

Cost of funds

Changes in the bank's capital or balance sheet liquidity might affect cost of funds to borrowers. In order to lend money to businesses, banks need to attract funds (e.g. bank capital, deposit liabilities, or wholesale funds) by paying a return or interest on them. According to the loanable funds theory, banks need to aim to hold deposits for similar lengths of time as the term of loans financed. In order to survive, banks have to cover the interest rates they pay on deposits from interest rates they charge on loans (interest margin). Higher loan prices in turn affect the quantity of funds intermediated by banks.

Hubbard, Kuttner and Palia (2002) investigated the effects of banks' financial condition on the borrowers' cost of funds after controlling for borrower risk and information costs. They find that capital-constrained banks charge higher loan rates than well-capitalised banks and that this cost difference is especially associated with borrowers for which 'information costs' and 'incentive problems' are most important (pp. 561). Their result is also consistent with models that allow banks to charge a risk premium to borrowers facing switching costs in bank-

borrower relationships, as well as models of the bank-lending channel of monetary transmission.

Informational Asymmetries

As noted earlier in section 2.2.2, informational asymmetries are always present in enterprise financing transactions. Entrepreneurs typically possess privileged information on their businesses that cannot be easily accessed—or cannot be accessed at all—by prospective lenders. According to the New Keynesians, this leads to two problems. First, the lender/investor may not be able to differentiate adequately between ‘high quality’ and ‘low quality’ companies and projects. In that case, price variables (i.e. interest rates) may not work well as a screening device, because high interests may lead to an excessively risky portfolio (the ‘adverse selection’ problem). Second, once the lenders/investors have supplied the funding, they may not be able to assess whether the enterprise is utilizing the funds in an appropriate manner (the ‘moral hazard’ problem). To mitigate these problems, bankers may adopt precautionary measures, such as requiring that financing be collateralised. Alternatively, they may simply turn down the request for financing (‘credit rationing’). Informational asymmetries tend to pose more severe problems for SMEs than for larger business. The information that SME can realistically provide to external financiers (in the form of financial accounts, business plans, feasibility studies, etc.) often lacks detail and rigor. This problem is often aggravated by the low level of education of small entrepreneurs, who may not be in the position to adequately articulate their case.

Lenders’ Risk Appetite

Following from Post Keynesian view of lenders behaviour, banks are only willing to lend to borrowers when the risk/return profile of such borrowers are in their favour (Coppola, 2014). Risk appetite is simply the extent to which a lender is willing or inclined to finance a borrower. It is usually measured as *positive*, *negative* or *neutral*. Risk appetite is shaped by a number of factors: *history of previous loan performance*, *risk profile of business sectors being financed*, *amount of loan security*, *financial regulations* and *general economic and financial conditions*. The amount and price of credit supplied to a borrower reflect, according to the banks’ experience and its loan performance data, the probability of the borrower not being able to repay the debt. The higher the level of risk, the higher the price must be to cover the

likely loss. Banks are now more risk averse, both due to the credit crunch and because they are required to be compliant with new financial services regulations (e.g. Basel III). These new rules require banks to hold more capital against certain types of assets. For every loan a bank makes, it must set capital aside to cover for unexpected losses. The idea is to ensure the bank remains solvent and depositors are secure, even if that loan becomes impaired. In order to protect depositors from losses and reinforce consumer confidence in the banking sector, all banks around the world are currently holding higher levels of capital than in recent years. There is a cost to holding this capital and, as banks have increased the amount set aside, this cost has risen along with it.

The amount of risk a bank is faced with is also influenced by the level of security offered by the borrower, so that when the value of security falls, such as commercial property values, the risk increases, and vice versa. The Basel III regulatory framework sets the methodology and calculations used to determine the cost associated with the risk of lending. Risk-adjusted loan pricing enables higher-risk but still allows viable businesses to access finance whilst lower-risk and well-managed firms get the benefit of lower-cost funding. Pricing of risk is in the interest of businesses; even more marginal businesses can still get access to finance (BBA, 2011).

Transaction Costs

Besides risk profile considerations, the business of lending to SMEs is associated with several transaction costs (e.g. Zavatta, 2008; Duan, Han and Yang, 2009; Venkatesh and Kumari, 2011). These include: (i) *administrative costs* (e.g. costs of meeting a business customer, appraising a loan application and conducting due diligence, setting up a facility, monitoring, controlling, and revising that facility, etc); (ii) *legal fees* (e.g. costs of providing the legal or contract documentation, filing debt claims, etc); and (iii) *costs related to the acquisition and dissemination of information* (e.g. costs of purchasing a credit profile from a specialized agency and costs of disseminating regular information such as notification of interest rate changes or changes to other lending fees).

While banks may use credit and performance-scoring tools, most lending decisions will also require a judgement to be made by an experienced relationship manager. Due to their size, smaller facilities tend to have a relatively higher transaction cost per pound lent than larger

facilities, and not all of that cost can be recovered through fees. So small facilities tend to bear higher margins, even if the risk is comparable with larger lending.

2.5.2. Financial Institution and Market Structure

Bank Size and Organisational Structure

Credit supply to SMEs is also constrained by the banks' organisational structure in terms of the decision making strategy vis-à-vis the administration of lending functions: appraising and approving loan applications, monitoring of credit risks, reviewing loan performance, etc. Differences in bank organisation structure account for the operational differences that exist in the loan approval processes of banks. The operational differences between banks of different sizes can be better understood within the framework of Williamson's (1967) theory of hierarchical control. As the size of an organisation increases, it loses control between successive hierarchies because of its centralised decision making structure. Large banks therefore tend to follow explicit rules and procedures in order to avoid distortions, which tend to arise in a multiple layer structure. Small banks on the other hand may be able to give greater discretion to their loan officers because of their fewer layers of management and decentralised structure. Similarly, as large banks expand in size and geography (i.e. number of branches), it becomes difficult to monitor the behaviour of employees and this could lead to agency problems. In order to maintain control, large banks must establish formal lending procedures, which all staff should follow (Cole, et al., 2004).

Although large banks tend to enjoy economies of scale in processing hard information, they are relatively fraught with organisational diseconomies¹⁸ with respect to processing soft information because it is difficult to quantify relationships and transmit them through the channels of communication prevalent in large organisations (e.g. Stein, 2002; Berger and Udell, 2006). For example, under relationship banking, large banks with a multi-branch hierarchy face agency problems. This is because it may be difficult for a relationship manager who is the custodian of soft information to communicate same to the management or owners

¹⁸ Organisational diseconomies in large firms can also be explained by the fact that large firms, especially those created by consolidation are efficient in financing transactions loans and offering wholesale services to large corporate customers making them reduce the provision of retail services to small firms (see for example, Williamson, 1967; 1988; Stein, 2002; Berger and Udell, 2006)

of the bank. Thus this may give relative advantage in relationship banking to small institutions because they typically have fewer intermediaries between ownership and management. This means that because small institutions have lower agency costs in the sense that there is only a thin line of separation between ownership and management, they are more likely to have comparative advantage over their large multi-office counterparts in the financing of SMEs using relationship-lending techniques.

Ownership Structure

Apart from size considerations, the lending practices of banks and their willingness to lend to SMEs are also largely correlated with the type of ownership structure of the lender. For example, conventional wisdom with regard to small business financing says that small domestic private banks are more likely to finance SMEs because they are better suited to utilising ‘relationship lending’ approaches based on the acquisition of soft information by the loan officer through continuous, personalised, direct contacts with SMEs, their promoters and the local business community in which they operate (e.g. Berger and Udell, 1995; Keeton, 1995, and Strahan and Weston, 1998). However, some recent studies (e.g. Berger and Udell, 2006, Berger, Rosen and Udell, 2007, and de la Torre, Martinez Peria and Schmukler, 2010) have begun to dispute this conventional wisdom and propose a new paradigm for bank SME finance, arguing that large and foreign banks can be as effective in SME lending through transactions lending technologies (e.g. credit scoring, asset based lending, factoring, leasing, etc) and centralised structures instead of relationship lending. In yet another recent study, Beck et al. (2011) find that foreign, domestic, private and government owned banks use different lending technologies and organisational structures for SME financing. However, they find that the extent, type and pricing of SME loans are not strongly correlated with lending technologies and organisational structures; suggesting that lending technologies are somewhat irrelevant in issues of SME financing.

Effect of Bank Consolidation

The global consolidation in the banking industry has raised concerns about the survivability of small banks, and as small banks are vital sources of credit for small firms, these concerns become more important for the survival of the economy as a whole. The most compelling evidence from numerous studies (especially for US) reveal that large banking institutions tend

to reduce their small business lending after mergers and acquisitions. However, this reduction appears to be offset at least in part by the decision of other banks in the same local market (*de novo* banks) to substantially increase lending to small businesses by way of response. (e.g. Peek and Rosengren, 1995a; Berger, Saunders, Scalise and Udell, 1998; Avery and Samolyk, 2004). Yet recent results shown in Schmieder, Marsch and Aerssen (2010) appear to be intriguing as the authors found that consolidation does not have a sustainable negative impact on the financing of SMEs in the German market. One reason alluded for this is the absence of a “negative size effect” as well as the efficiency and competitiveness of the German banking market, which reduces any potential threats to SME financing (pp.464). This perhaps also suggests that the nature of the German financial system (being a bank-based system) has positive effects on the financing of small businesses. Strahan and Weston (1998) investigated the case of consolidation among small independent banks in USA and found a positive impact on small business lending. However, for small banks that are members of a bank holding company (BHC), results show that they tend to replicate the behaviour of their parent companies, implying that they lend less to small businesses (Keeton, 1995; Jayaratne and Wolken, 1999).

One crucial matter in considering the effect of consolidation on small business lending is the issue of *motives* of the acquirer bank. Accordingly, if a large bank acquires a smaller bank because it is mainly interested in acquiring low-cost deposits or in expanding its geographic market reach, then there is likelihood that it might restrain its lending to small businesses (Peek and Rosengren, 1995a). Furthermore, an acquirer bank might find that rather than manage risks locally, it will be more profitable to manage its liquidity and loan diversification more efficiently on a larger scale. On the other hand, a large bank might be attracted by a small bank’s profitable small business loan portfolio. In that case, the large bank might be strongly incentivised to maintain existing borrowing relationships. Hence it might want to support an even greater level of small business lending (Levonian and Soller, 1996).

Mergers and acquisition also have an *effect on loan pricing*. Rauch and Hendrickson (2004) found that, *all else being equal*, consolidation lowers the interest rates charged by large banks for small business borrowers who qualify, while small banks raise the loan rates for borrowers who do not. One of the factors that determine the post merger loan spreads in banks is the operational efficiency of the enlarged group. Erel (2006) supports this argument and finds that

mergers reduce loan spreads, especially when there are huge cost savings from the reduction in post merger operating expenses and that this result is stronger when the acquirer bank and the target bank have some market overlaps. However, there might be fears that significant in-market overlaps could raise loan spreads and create more concerns for market power. As the size and complexity of organisation increases, organisational diseconomies might set in as costs of small business lending rises in the enlarged institution (Strahan and Weston, 1998; Stein, 2002). There is also considerable evidence that even small banks' acquisition of soft information about borrowers reduces after a merger (e.g. Ogura and Uchida, 2007). This view is consistent with Stein's (2002) prediction that organisations with a relatively flatter structure are likely to perform better in acquiring soft information. Cavallo and Rossi (2001) also suggest that mergers should be oriented towards raising the scope for small banks to expand their scale of production while enabling large banks to improve efficiency by focusing on output mix diversification.

Effect of Bank Market Structure and Competition

Firms' access to bank finance is also constrained by the bank market structure, i.e. the level of competition and concentration in the bank market. Some studies find that higher concentration is associated with higher credit availability, which is consistent with the *information hypothesis* that less competitive banks have more incentive to invest in soft information. Other empirical studies, however, find support for the *market power hypothesis* that credit rationing is higher in less competitive bank markets (Carbo-Valverde et al., 2009). Market structure effects on credit availability occur in at least two ways: product market competition and regional or geographic market competition.

Product Market Competition: Product market competition can be explained in terms of the size of loan as well as the range of financial services banks can offer their customers. Larger banks are generally able to make larger loans than smaller relationship-driven banks. Since there are fixed costs associated with processing and monitoring any size of loan, larger banks benefit from scale economies when they make large loans. They are also able to benefit from scale economies by using credit scoring to make large amounts of standardised loans and credit cards to businesses. Large and foreign banks are also able to offer certain types of financial services to their customers to generate additional fee income, such as foreign

exchange transactions, interest rate swaps, asset financing, commercial papers, bankers' acceptances, and so on.

Geographic or Regional Market Competition: Lending to small businesses can also be influenced by the population density, competition and nature of economic activity in the local area being served or where small business customers carry out their primary trading activities. Large banks tend to situate their offices in areas of relatively high population density and where there is a substantial amount of economic activity, while small banks generally have higher market share in the rural areas due to the nature of their small business customers. However, Gilbert (2000a&b) reports that the trends have since changed as he finds evidence that large banks are gaining increasing interest and market share in small business lending in many rural communities in US including relatively low population density areas.

Since the 1980s and early 1990s, increasing bank deregulation (namely the relaxation of controls or constraints over the scale and scope of banking business¹⁹) has led to geographic branch expansion by large banks across borders. Large banks especially are now able to make distant loans to business customers, thanks to credit scoring and other transactions lending approaches. However, such automated loans have certain limits²⁰ beyond which the decision is taken on the basis of other factors as decided by the relationship managers and credit risk sanctioners. Critics of multi-office banks have argued that the lending behaviour of large banks does not support small business lending (Keeton, 1995). First, because of their size, large banks might have incentives to make more of large loans and less of small loans. Second, large banks follow rigid lending rules due to their centralised organisational structure. This might discourage relationship lending and hence result in fewer loans being granted to small businesses. Lastly, large banks are assumed to use deposits acquired through their multi-office branches to finance large institutional or cross border investments.

¹⁹ In US, the Riegel-Neal Interstate Banking and Branching Efficiency Act of 1994 removed restrictions on nationwide branching since June 1997 and permitted bank holding companies to buy existing banks and other holding companies located throughout the nation beginning from the fall of 1995 (Gilbert, 2000a,b).

²⁰ In RBS for example, this limit is £25,000

The Profitability Incentive

Banks' supply of loans to SMEs is largely driven by their perception of the size and profitability of the SME lending market. In fact, in a survey of lenders, 81% of banks in developed countries and 72% of banks in developing countries indicate that profitability is the most important determinant of their involvement with SMEs (Beck et al., 2008b). In a similar survey of bankers' view of lending relationships by Bharath et al. (2007), many bankers view the generation of additional business in the future as the principal reason for engaging in relationship lending. In fact, this search for yield contributed to the apparent replacement of traditional business lending with securitization of bank loans during the build-up to the recent financial crisis. Prior to the crisis, banks were regularly initiating loans with the intention of selling off all or part of their holdings to other investors. Loans that are securitized in this manner do not appear on banks' balance sheets and thus would not be counted in standard measures of bank loans (Bernanke and Lown, 1991).

2.5.3 Lending Technology

Generally, SME lenders use a variety of lending technologies to resolve the problems of informational opacity associated with small firms. Relationship lending and credit scoring techniques are the two main lending technologies predominantly used in small business lending. Nowadays, however, banks in developing credit markets are increasingly embracing other cutting edge techniques in assessing borrowers, such as psychometric scoring and judgmental score cards. In addition, as lending to SMEs shrinks in the wake of the recent financial crisis, there is increasing use of online peer-to-peer lending techniques mostly in advanced credit markets, which have now implications for the intermediation role of traditional banks. This sub-section examines some of the features of these lending technologies and how they determine banks' involvement with SMEs.

Relationship Lending

Relationship lending largely refer to techniques involving the acquisition of soft information on borrowers (through repeated interactions over time and across financial products) as a basis for lending to informationally opaque SMEs. Banks are able to monitor the credit risks of

firms when they build long-standing relationships with them. As noted earlier, banks that are able to build stronger and lengthier relationships with small firms are better able to acquire soft information, which then helps them to assess the credit worthiness of borrowers. Banks can obtain information about borrowers by observing their credit history. For example, if a prospective borrower has had a checking or savings account or other loans with a bank over a long period of time, the loan officer can take a look at past activity on the accounts and learn quickly about the borrower (Nakamura, 1994, Boot, 2000). Thus, long-term customer relationships reduce the costs of information collection and make it easier to screen out bad credit risks. A detailed analysis on the benefits and costs of relationship lending techniques is examined in chapter 7.

Credit Scoring

With revolutions in technology, lending decisions are now made using the credit score of the small business owner. Many banks, especially large ones now rely significantly on credit scoring to assess the riskiness of less transparent SMEs. Credit scoring is an automated lending technique, which involves the use of historical data and statistical measures to ascertain or quantify the likelihood that a borrower will default on a loan (Berger and Udell, 2003). Credit scoring makes it easier for large banks to make large pool of loans faster, cheaper and over great distances. Credit scoring has thus been viewed as an alternative technology to relationship lending technology. It tends to replace traditional lending technique based on subjective assessments of prospective borrowers – e.g. previous loan repayment performance, current capacity and willingness to repay, the presence of collateral and other forms of security and/or guarantees. The emergence of credit scoring has enhanced objectivity in the loan approval process. This objectivity means that lenders are able to apply uniform underwriting criteria to borrowers (see Mester, 1997:8-9). With credit scoring, it is relatively easier for banks to build more reliable proprietary models from a large pool of loan database (Berger and Udell, 2003:314). Large banks in particular are able to adapt new technology and take advantage of scale economies to provide standardized services at relatively lower unit costs (Carter and McNulty, 2005:1116).

The introduction of credit scoring may have significant effects on small business credit markets, including the availability, riskiness and pricing of loans as well as the interactions between the borrower and his lender. Numerous studies have found that the use of credit

scoring is associated with an increase in small business lending, especially to relatively opaque small firms, risky borrowers, borrowers in low and moderate income areas, etc (e.g. Frame, Srinivasan and Woosley, 2001; Frame, Padhi and Woosley, 2004; Berger and Frame, 2005; Berger, Frame and Miller, 2005; Berger, Cowan and Frame, 2009). On the efficiency of credit scoring models, research has found that the use of credit scoring reduces the cost of information between borrowers and lenders (Frame, et al., 2001:813) as well as the time and human input involved in reviewing loan applications (Feldman, 1997). Since data has replaced experience, the role of underwriters and human judgment in credit decisions is now less important.

Changes in technology as exemplified by the use of credit scoring has also been found to enhance large banks' chances of making large amount of small business loans to small firms even in distant markets. This is because credit scoring makes the credit evaluation of loans faster and easier. Empirical evidence reveals that transactions-based loans tend to be carried out over greater distances and for longer periods of time than relationship-based loans (Craig, Jackson III and Thomson, 2005). As credit scoring does not require a physical market presence, large banks can effectively penetrate new markets without having to bear the cost of establishing branch networks. This assertion is corroborated by Anderson (2007) when he stated "relationship lending is appropriate in communities where lender and borrower had personal knowledge of each other, but is inefficient in an era of high customer mobility and extended branch networks" (pp.7). For example, because of the use of scoring systems, borrowers in distant markets are able to obtain 'unsecure credit' from banks through 'direct marketing channels' (Akhavain, Frame and White, 2005:579). Thus, large banks because of their centralized structure are able to specialize in distance lending to small opaque businesses in order to beat their small bank competitors.

In spite of its advantages, credit scoring as a lending technology is not without limitations. First, credit scoring has changed the relationship between borrowers and their lenders. Since large banks are able to extend credit to small businesses from a distance, they now keep an arm's length from their customers and tend to invest less in building relationships. A second disadvantage of credit scoring is that it lacks the forward-looking component, which is present in relationship lending since it only considers mostly previous information on the borrower. Thirdly, the accuracy of credit scoring models might be jeopardized if not based on balanced,

reliable, and up-to-date information on both ‘well- performing’ and ‘poorly performing’ loans (Mester, 1997:10). Fourth, large banks find it extremely difficult to monitor loans since a vast majority of their clients are outside their traditional lending market. Small banks tend not to have this constraint because they have a good knowledge of local market conditions in which most of their borrowers operate. Thus, smaller banks may be able to maintain their advantage over large banks in monitoring loans. For example, borrowers that fail to qualify for loans on the basis of credit scores or other forms of hard information but are nonetheless credit worthy on closer examination could possibly approach these relationship lenders as well.

Psychometric Scoring

Psychometric scoring is a cutting-edge tool used to offer cost-effective non-collateral loans to SMEs. Psychometric tests are a computer-based questionnaire tool that assesses a borrower’s personality traits and other traits known to differentiate between successful and unsuccessful entrepreneurs. These traits include factors like business aptitude, intelligence, innovation, locus of control, ethics, honesty, integrity, conscientiousness (dependability, industriousness, efficiency) and optimism, and so on (Anderson, 2011). Certain other factors are often included as control variables, such as age, past business experience, and firm size (Acharya, et al., 2007). They are currently being introduced to developing credit markets like India, Peru, Argentina, Mexico, South Africa, Kenya, Ghana, Nigeria, and Uganda who seem to have growing interest in making significant investments in data infrastructure and risk assessment models like advanced credit markets. They are used in micro-finance environments for improving access to low-cost financial services and enhancing financial inclusion. In some banks, SMEs are asked to provide a detailed business plan and repayment plan and then appraisal is done on the merits of the outcome of the psychometric test.

Judgemental Score Cards

In appraising SME loans, loan officers consider a wide range of factors such as financial capacity to repay loan, willingness to repay loan, collateral pledged, and the specific terms and conditions of the loan contract. At the same time, banks do not want credit analysts to spend hours spreading a small company’s financial statements to underwrite a £5,000 loan. The use of simple scorecard that evaluates a mix of financial and non-financial factors has been found to be the most appropriate way to appraise a large book of SME loans (Caire, 2004). Banks

that adopt this approach are able to make SME loan underwriting more cost-effective and are also be able to customize customer information to specific local economic and lender conditions. In developing credit markets where third-party information infrastructure is not fully developed, banks find it increasingly useful to mine their own institutional knowledge and historical portfolio data to develop scorecards that suit their strategies for the SME market segment. It is more sensible for banks in such markets to develop credit-scoring models that utilize judgmental scorecards to predict loan defaults.

Judgmental scorecards structure credit policies and management risk preferences into a mathematical model that ranks applicants according to risk. A judgmental model, unlike statistical models, can be created without any historical data, so it can be applied to new segments. The use of judgmental models can reduce the need to request collateral for loans granted to young and informationally opaque SMEs. The technique combines both financial and non-financial information about SMEs to make the default prediction models for SME loans more comprehensive and to have a higher chance of being more accurate than if only financial information was taken into consideration. Qualitative data relating to such variables as legal action by creditors to recover unpaid debts, company filing histories, comprehensive audit report/opinion data and firm-specific characteristics make a significant contribution to increasing the default prediction power of risk models built specifically for SMEs (see Altman, Sabato and Wilson, 2009).

Peer-to-Peer Lending

In the wake of the recent global financial crisis, there has been a rise of alternative finance intermediaries, particularly in the developed credit markets, due to SMEs' reduced access to credit from traditional banks. The evolution of information technology in recent years has led to the development of electronic marketplaces where commerce takes place remotely through the economic interaction of market participants. Within the financial services industry, a new and innovative method of loan origination has entered the credit market since 2005. This method of lending, known as 'peer-to-peer (P2P) lending', 'crowd funding' or 'social lending', is an online platform where borrowers place request for loans online and private lenders bid to fund these loans in an auction-like process (Klafft, 2008). Online lending platforms are now available in a wide range of advanced countries, such as the US (Prosper Marketplace Inc., Lending Club Corporation), UK (Zopa Ltd, Funding Circle, Ratesetter,

Wellesley, Assetz Capital), China (CreditEase, Lufax, Tuandai), Germany (Smava, Lendico, Zencap), and Japan (Maneo, Exchange Corporation KK) just to mention a few. According to Baeck and Collins (2013), more than US\$2.7 billion was raised through crowd funding globally in 2012, which helped to fund more than 1 million new projects.

There is an ongoing debate about disintermediation and the future relevance of traditional financial intermediaries fuelled by the increasing role of online lending platforms, where an electronic marketplace replaces a bank as the traditional intermediary and enables brokerage of consumer and business loans directly between borrowers and lenders (see Berger and Gleisner, 2009). Thus, the growth in online P2P lending sector has important implications for competition for SME loans in traditional bank intermediaries. There is evidence to suggest that there is a difference in the lending model and competitive strategy of P2P lenders and their traditional bank counterparts. The main differentiation strategy between P2P lenders and traditional banks is the speed and ease of processing loan transactions due to the help of automated lending systems, which also help to reduce operating costs. In addition, investors in P2P lending markets also earn rates of return on their investment, which tend to be higher than those offered on traditional bank deposits (see Wang et al., 2009). The economic value created by P2P lending intermediaries for borrowers has been summarized by Pierrakis and Collins (2013) to include the following: (1) speed of securing finance, (2) competitive interest rates vis-à-vis traditional banks, (3) improved cash flow, (4) increase in employment, (5) business expansion and asset purchases, (6) increased overseas business growth, (7) increased sales, and (8) increased R&D activities, including new product development. The main economic benefits of P2P lending for lenders/investors are two fold: (1) higher average annualized returns on investment than traditional bank savings, and (2) possibility of risk diversification, evidenced by the ability to micromanage their investments.

2.5.4. Lending Infrastructure

The lending infrastructure is also a key element in determining the availability and quantum of credit supplied by banks to small businesses. The lending infrastructure refers to the rules and conditions provided mostly by governments or their regulatory agencies that affect financial institutions and their abilities to lend to different potential borrowers. According to Berger and

Udell (2006), the lending infrastructure consists of three environments: (a) the information environment (b) The legal, judicial and bankruptcy environment (c) the tax and regulatory environments. All of these elements may directly affect small business credit availability by affecting the extent to which the different lending technologies can be legally and profitably employed.

The Economics of Information

One important aspect of the information infrastructure is the accounting environment. As findings from the literature have revealed, SMEs do not keep adequate accounting records and as such are unable to satisfy the requirements of banks who rely very much on financial (hard) information in making informed lending decisions. A robust accounting standards and the use of credible independent accounting firms are necessary conditions for informative financial statements. These are also necessary conditions for the feasibility of many components of loan contracting. For example, financial covenants are not feasible if the financial ratios calculated from bank financial statements are not reliable (Berger and Udell, 2006). Another important aspect of the information infrastructure is the availability of information on payment performance. Third party information exchanges or business credit bureaus provide a formal organizational mechanism for the exchange of commercial information on payment performance. The availability of commercial information like this has been shown to have power in predicting firm failure beyond financial ratios and other descriptive information about the firm (Kallberg and Udell, 2003). Survey data in the US also indicates that without credit bureaus, the time to process loans, the cost of making loans, and the level of defaults would all be higher (Miller, 2003).

The Legal, Judicial and Bankruptcy Environment

A country's legal and judicial infrastructure significantly influences the context in which loan contracting is conducted. The legal infrastructure that affects business lending consists of the commercial laws that specify the property rights associated with a commercial transaction and enforcement of these laws (Berger and Udell, 2006). The latter determines the confidence of contracting parties in financial contracts. Collectively, these two features constitute the rule of law as it relates to the extension of credit. Banks cannot effectively deploy specific contracting elements (such as covenants, maturity, collateral and personal guarantees) without robust

commercial and financial laws. According to Fleisig (1996), a number of legal reforms need to be implemented in order to develop the use of contracting elements like collateral (including movable assets) to secure loans, particularly in developing countries. These include: (1) changing the law to permit a greater variety of security interests in a wider range of transactions by a broader group of people; (2) making registry records public, reforming state-operated registries, restructuring public registries to permit competition, and privatizing registry services or allowing private registry services to compete with public ones; (3) speeding up enforcement and making it cheaper, changing the law to permit private parties to contract for non-judicial repossession and sale, and, when possible, allowing private parties to contract for repossession and sale without government intervention. The efficiency of bankruptcy system is also critical. How long a company stays in bankruptcy either in liquidation or in reorganization is important. Also important is the degree to which bankruptcy laws and their enforcement adhere to absolute priority. For example, the power of collateral will ultimately depend on whether the priority rights of secured lenders are upheld in bankruptcy.

The Tax and Regulatory Environment

The tax and regulatory environments may have direct effects on SME credit availability. A country's tax laws can either lure SMEs into the formal sector of the economy or keep them out of it. The tax system can inadvertently place SMEs at a disadvantage. For example, the taxation of manufacturers, traders and importers (e.g. import duty, sales tax, excise taxes, etc) can affect the costs of doing business and profitability of businesses depending on the rate of taxation and hence either encourage or discourage bank lending to SMEs. The second element, the regulatory environment, may also restrict SMEs credit availability indirectly by constraining the potential financial institution structure. In this connection therefore, the enforcement of capital requirements and direct government intervention have the ability to directly influence the quantity and cost of lending to SMEs. There is a direct link between activities of bank regulators and bank lending behaviour, especially with respect to the enforcement of capital requirements. Banks generally have a number of options when improving its capital position. They can shrink assets by selling securities, selling other assets, charging off loans or reducing new lending. In many cases, the enforcement of capital-to-asset ratios leads to the shrinkage of new bank lending to bank-dependent customers (e.g. Peek and

Rosengren, 1995b). Governments also often intervene in the lending market to influence loan supply, e.g. through the use of *interest rate subsidies*, *directed lending to specific sectors*, *loan guarantee schemes*, and a variety of other approaches to get SMEs financed. However, the gap between SMEs and larger businesses remains. With the recent financial crisis, many economies are looking to SMEs to provide much needed jobs and to help pull their economies out of recession, putting SMEs back into the spotlight of development and political agendas.

2.6. Chapter Conclusions

This chapter has examined a great deal of theoretical and empirical literature on the demand and supply side factors affecting bank involvement with SMEs. The theoretical models upon which the foundation of bank lending is carried out are the money creation and credit rationing concepts. The literature revealed a number of debates on the relative role of money demand and supply in determining lending constraints. The post-Keynesians explain that banks do not simply act as intermediaries, lending out savings deposits, but tend to create deposits by extending loans, a phenomenon that is contrary to the so-called money multiplier theory.

Mainstream economic theory assumes that asymmetric information is widespread in financial markets and that with the presence of “adverse selection” and “moral hazard” effects, credit rationing may persist even in liberalised financial markets. For post-Keynesians, information asymmetry is unrealistic because fundamental uncertainty exists in an investment project, so that both the lender and borrower are oblivious of the riskiness of the project. For post-Keynesians, the main constraints to bank lending are the changes in the financial condition of borrowers (e.g. amount of indebtedness, cash flow, liquidity and financial fragility, etc), which implies that banks also change their valuation of the riskiness of the borrowers.

It has been established that access to bank finance for SMEs is difficult and costly because they are relatively young and informationally opaque. The literature also shows that SMEs rely much on bank finance not just for their operational needs but also in order to build credit reputation early in their life cycle. The factors affecting the supply of credit to SMEs can be categorised into demand-side and supply-side factors. In particular, on the demand-side, borrower characteristics such as firm and owner characteristics, and the nature of borrower-lender relationships affect the underwriting practices of banks. Findings generally reveal that

banks, especially large ones, tend to be attracted to larger, older, well-established and more financially secure firms. Relationship-driven banks tend to pay more attention to applicants that have pre-existing loan and deposit relationships with them. Banks are also more likely to demand collateral from young and inexperienced SME borrowers. This is because SMEs are known to be risky and have high failure rate. While smaller banks have longer and more exclusive personal relationships with SME borrowers, large multi-office banks tend to have more short-lived, less exclusive and distant relationships with their customers. Empirical evidence reveals that longer firm-borrower relationships help to reduce loan prices and collateral requirements of firms, thereby increasing firm value. The terms of a loan contract (i.e. loan prices, maturity and collateral) are also dependent on a number of lender characteristics such as liquidity, risk profile, monitoring ability, reputation and bargaining power.

On the supply side, bank organisational structure, regulatory requirements, the type of lending technology adopted, and the bank market structure are dominant factors. Banks that have a relatively flatter organisational structure (such as smaller banks) tend to have advantages in loan monitoring and increased loan officer discretion. However, large banks with multi-office structures find it extremely costly to invest in relationships. Banks that are largely geared towards SMEs are known to be heavily reliant on relationship lending techniques, while large multi-office banks tend to have advantages in economies of scale and scope because they rely on transactions-based lending and other financial management services. Regulatory factors such as enforcement of capital requirements, sectoral credit limits and monetary policies also affect the quantity and cost of loanable funds via lenders' risk appetite, credit rationing and the credit channel, respectively. Banking consolidation also tends to affect SME lending. Empirical findings reveal that a large bank acquisition of a small bank often reduces SME lending in the short run, but this effect is offset in the long run by the decision of other small banks to increase lending to SMEs. Commercial lending is also affected by the structure of the banking market. This manifests in two forms: *product* and *geographic* market competition. Smaller banks tend to specialise in SME loans because they are unable to compete with larger banks for larger loans in order to keep up with regulatory limits on loan concentration. Moreover, they cannot offer a wide range of financial services, as do larger banks. Local and regional banks tend to situate their offices mostly in (less competitive) rural areas, while large banks operate in urban areas where most large businesses are found. However, with changes in

regulation, large banks now penetrate rural banking markets, raising questions regarding the survivability of small local banks and bank-dependent small business borrowers located in those regions.

Another supply-side factor affecting SME lending is lending technology. In addition to the use of relationship lending and credit scoring techniques, banks, particularly in developing credit markets are increasingly embracing other cutting edge techniques in assessing borrowers, such as psychometric scoring and judgmental score cards. Technological revolutions in advanced credit markets have also made electronic marketplaces possible, such as in peer-to-peer lending, where borrowers place request for loans online and private lenders bid to fund these loans. The emergence of online intermediaries as alternative financing sources for businesses has competitive implications for the intermediation functions of traditional banks. Lastly, the lending infrastructure, which consists of three environments (the information environment, the legal, judicial and bankruptcy environment and the tax and regulatory environments) directly affect small business credit availability by affecting the extent to which the different lending technologies can be legally and profitably employed.

Overall, this chapter has provided useful insights into the influence of demand side factors, bank-level factors and other external factors on SME lending practices. Next, we examine the trends in bank lending to SMEs in Nigeria.

CHAPTER 3

TRENDS IN LENDING TO SMEs IN NIGERIA'S POST-CONSOLIDATED BANKING SECTOR

3.1. Introduction

Since 2004, the Nigerian banking sector has witnessed series of reforms aimed at making Nigerian banks among the strongest banks in the world. These reforms included, amongst others: (1) consolidation of the banking sector, and (2) introduction of the '*Financial Sector Strategy (FSS 2020)*'. Consolidation is a reform designed to strengthen the banking sector through recapitalization policy. The policy was to increase the minimum capital base of each bank from ₦5 billion (~£20 million) to ₦25 billion (~£100 million). The additional capital was raised through the capital market as well as through mergers and acquisitions. The Financial Sector Strategy (FSS 2020) on the other hand, is a complementary reform blueprint designed to transform the financial sector into a growth catalyst in order to make Nigeria a "financial hub" in Africa and to achieve Nigeria's goal to become one of the top 20 economies in the world by the year 2020 (Adamu, 2009).

The vision's strategy includes helping to build a vibrant SME sub-sector, known to be the fulcrum of industrial development, worldwide. To achieve this, the banks needed to be re-capitalized to enable them play their role effectively. According to the FSS 2020 MSME Implementation Committee Report (2008), the SME development vision states that:

"By 2020, our credit to GDP ratio will be among the top three of emerging markets, with the most productive MSME sub-sector and 70% of the Nigerian population having access to credit"

The above stated vision for the SME hopes to make credit accessible, convenient and affordable. It also hopes to foster a vibrant and competitive micro, small and medium enterprises (MSME) sector that will enhance job creation, promote economic growth, reduce poverty, and create wealth. Small and Medium Enterprises (SMEs) are defined as entities with asset base not exceeding ₦500 million or ~ £2 million (excluding land and buildings) with employees of between 11 and 200 (CBN, 2013). SMEs in Nigeria typically engage in the following kinds of businesses: block making, soap and pomade making, leather

manufacturing, livestock farming and other agri-business, food processing, bottle water production, general trade and commerce, as well as services such as restaurant and bars, educational services, transport services, haulage and logistics, etc

The catalyst for the growth of the Nigerian economy lies in the banking system through efficient allocation of credit, especially to the real sector. Unfortunately, banks' post consolidation credit administration has continued to neglect SMEs and real sector development. The huge capital acquired by the banks during the consolidation exercise has been largely channeled to non-SME, non-real sector bad and doubtful loans, such as loans to oil and gas as well as margin lending to the capital market, which lost over 66% of its value during the financial crisis. In Nigeria, banks generally favour the financing of commerce for quick returns to capital and tend to focus on their ability to generate high interest and fee-based income within a short period. Consequently, all efforts made in the past to attract real sector finance from the banking system have been largely unsuccessful. As examined in chapter 2, the literature suggests that banks' lending behavior reveal that the more banks are capitalized or become larger by way of mergers and acquisitions, the fewer loans they grant to SMEs (e.g. Peek and Rosengren, 1995a; Berger et al., 1998; Avery and Samolyk, 2004).

The aim of this chapter is to examine the trends in bank lending to SMEs in the post-consolidated banking sector in Nigeria. The importance of SMEs in any economy cannot be overemphasised. SMEs in Nigeria account for more than 70% of industrial labour force and 60% of agricultural employment (Lawal and Ijaiya, 2007). In 2012, Nigeria had about 17.6 million MSMEs employing about 32.4 million people, and contributing about 46.5% of nominal GDP (Sanusi, 2013). However, one of the greatest obstacles facing SMEs in Nigeria is poor access to funds. This is further compounded by the fact that even where credit facilities are available, they may not be able to assemble the required collateral to access such funds. Between 2003 and 2012, commercial bank loans to SMEs dropped at an exponential rate. Analysis of the annual trend in the share of commercial bank credit to SMEs indicates a decline from about 7.5% in 2003 to less than 1% in 2006 and a further decline in 2012 to 0.14%.

Given the constraints faced by SMEs in Nigeria, the government has over the years taken a number of steps aimed at improving the prospects of SMEs, in terms of access to bank credit. Some of these steps include the creation of the following agencies and schemes – Small and

Medium Enterprises Development Agency (SMEDAN), Small and Medium Enterprises Equity Investment Scheme (SMEEIS), Bank of Industry (BOI), Bank of Agriculture (BOA), the CBN Intervention Fund for Refinancing/Restructuring loans to the Manufacturing Sector, Agricultural Credit Schemes, and the Micro, Small, Medium Enterprise (MSME) Development Fund, amongst other financing programs. These were aimed at addressing difficulties SMEs face in obtaining loans, and helping commercial banks develop consistent policies for dealing with SMEs, while ensuring that the provision of loans does not compromise the long term sustainability of the banking industry (Ukoha, 2013a). Such policy initiatives are necessary, given the importance of SMEs in driving innovation, growth and employment generation. However, despite the efforts of the Federal Government of Nigeria and other stakeholders to make it easier for SMEs to access bank loans, they still appeared to find it difficult to meet the requirements for obtaining bank loans.

The rest of this chapter is structured as follows: Section 3.2 takes a look at the overview of the Nigerian banking sector from pre-independence to post-consolidated era. Section 3.3 examines the trends in commercial banks' credit to SMEs in Nigeria, and highlights the differences between bank lending to SMEs in the pre-consolidated and post-consolidated era. It also discusses the efforts made by the Nigerian government to boost commercial lending to SMEs, and the restructuring of the microfinance sub-sector as part of efforts to expand access to financial services to MSMEs. In section 3.4, the types and features of commercial bank lending facilities available to SMEs in Nigeria are highlighted to gain an understanding of the lending practices and preferences of the banks. The chapter concludes in section 3.5.

3.2. Overview of the Nigerian Banking Industry

Before discussing the trends in SME lending in Nigerian banks, it is important to appreciate the history of Nigerian banking system and how this sets the tone for understanding the nature of commercial banks' lending practices to SMEs in the country today. The evolution and development of the Nigerian banking sector can be readily understood by categorizing the history of banking in Nigeria under four broad phases: (1) the pre-independence era (1929-1959), (2) the post-independence era (1960-1985), (3) the pre-consolidation era (1986-2004), and (4) the post-consolidation era (2006-date).

3.2.1. The Nigerian Banking Sector Before Consolidation

The Pre-Independence Era (1929-1959)

Under the British colonial rule, Nigeria effectively had no formal financial controls. The first indigenous bank in Nigeria – the Industrial and Commercial Bank – was founded in 1929, “a time when banking was effectively unregulated and entry was unrestricted” (Brownbridge, 2005). Between 1947 and 1952, more than 30 private local banks sprang up but went into liquidation. Most of these banks at the time were short-lived due to a combination of mismanagement, insider lending and inadequate capitalization. The first steps towards creating a developed banking system came in 1948 with the creation of an inquiry to investigate banking practices. The GD Paton report, which came from the inquiry, prompted the need for regulatory intervention and for reforms to be instituted to address the anomalies in the industry (Atuche, 2009; CGI, 2010). As a result, the Banking Ordinance Act of 1952, Nigeria’s first banking law, came into existence. Banks now had to obtain a license to prove they had enough funds to operate and were subject to governmental supervision. The introduction of the ordinance for the first time imposed entry conditions for banks such as minimum capital requirements, and the loss of public confidence induced by the failure of local banks, brought the indigenous banking boom to an end by the mid-1950s (Nwankwo, 1980).

The next step forward came with the establishment of a central bank under the 1958 CBN Act, which began operating in the mid-1959. The CBN was meant to oversee the distribution of Nigeria’s currency, control and regulate the banking sector. As there were only 3 foreign banks in the country at the time and 2 domestic banks, each with 20 branches, the central bank was meant to lend to these banks and execute government monetary policy decisions.

The Post-Independence Era (1960-1985)

Only 4 indigenous banks survived until independence in 1960 and their survival was solely due to substantial financial support from the regional governments then in existence (Brownbridge, 2005). This marked the beginning of state government (then known as ‘regional government’) participation in banking. Despite the banking sector’s auspicious start, much of the next 25 years saw huge corruption and stagnation in the sector. It was claimed that nationalization in the 1970s and early 1980s would help protect and reform Nigeria’s banks, but in fact nationalization made it even easier for the country’s leaders to engender

corruption (CGI, 2010). Foreign banks dominated the Nigerian banking sector until 1970s and 1980s when a number of measures were taken by the government. Instead of foreign bank domination, the new change resulted in a banking industry dominated by public sector ownership, i.e. state banks (Aburime, 2007). This occurred as a result of government decision to nationalize foreign banks, culminating in the federal government acquisition of 40% of the shares in the 3 largest foreign banks at the time, which were Barclays (now Union Bank), United Bank for Africa and Standard Bank (now First Bank). The rationale for government's participation in commercial banking was to break the monopoly power and discriminatory practices of the expatriate banks and give financial assistance to indigenous banks (Nwankwo, 1980). The Economic Stabilization Act of 1982 and the National Economic Emergency Decree of 1985 are inclusive of the other measures introduced to sanitize the banking system from the financial distress that occurred in the early 1980s (Atuche, 2009).

The Pre-Consolidation Era (1986-2004)

General Ibrahim Babangida's administration took the first step toward private enterprise as a means of reinvigorating the sector with the 1986 Structural Adjustment Programme (SAP). The deregulation of the sector saw a rush of new players to the sector – by 1992, the number of banks had increased from just 40 banks in 1985 to 121 banks with over 2,000 branches. Not only that, there were now more than 400 finance houses where there had been 10, and 250 mortgage lenders compared to just 1 that was in existence before SAP (CGI, 2010). The average growth rate of banking assets sprang from less than 10% in 1985 to 30.4% in the same period (Atuche, 2009). The sector had been somewhat secured by the 1988 creation of the Nigeria Deposit Insurance Corporation (NDIC), which ran a deposit insurance scheme to cover depositor's money if their bank failed.

During this SAP era, the CBN adopted severe contractionary policies, which included the withdrawal of billions of naira from the banking system. It further tightened the monetary policy in August 1987 by raising the minimum discount rate by 400 basis points to 15%. Interestingly, the SAP era is strikingly similar to today's circumstances. In spite of this contractionary stance, the boom in the sector continued unabatedly such that by 1994, there were approximately 66 commercial banks, 54 merchant banks, 402 community banks, 228 people's bank branches, 145 mortgage institutions, 132 bureau de change, 140 stock brokerage firms, 666 insurance firms and 3 discount houses (Atuche, 2009). Although the SAP had led to

an explosion in growth, structurally the banking sector was still on very shaky ground. Deregulation had worked too well, attracting entrants to the sector who were using banks as fronts for illegal practices like ‘round-tripping’, where banks could be used to buy hard currency at a preferential rate, then resell it at higher market rate (CGI, 2010). The sector was drastically under-capitalized, with many banks effectively insolvent, while others were totally reliant on government deposits to stay in business. The CBN’s hands-off approach led to many banks concealing bad debts with false accounting.

The government intervened in 1997 to ease the tension created by the unmitigated growth in the boom period by raising capital requirements to ₦500 million (~£2 million) by December 1998 from mere ₦40 million (~£160,000) for commercial banks and ₦50 million (~£200,000) for merchant banks. Overall, about 30 banks had to be liquidated by the end of 1998. As at 2001, the minimum capital base for banks stood at ₦1 billion (~£4 million) and was subsequently raised to ₦2 billion (~£8 million) with December 2004 as the deadline set for compliance. By 2003/2004, there were 89 banks in the now highly competitive sector, often understaffed or run by people looking to make a quick profit at the expense of investors. Bank credit as a ratio to GDP in Sub-Saharan Africa had an average of 57%. In the developed world, such as Europe and US, it stood at 272%. In Nigeria, the ratio was just 24% (CGI, 2010). It became evident that something had to be done to stop the banking sector from collapsing.

3.2.2. The Nigerian Banking Sector After Consolidation

Post-Consolidation Era (2006 till date)

The CBN’s assessment of the 89 banks, based on their returns, classified 62 as sound/satisfactory, 14 as marginal and 11 as unsound as at end-March, 2004 (Adamu, 2009). Further analysis of the marginal and unsound banks showed that they accounted for only 19.2% of the total assets of the banking system, 17.2% of the total deposit liabilities and 19.5% of the industry’s non-performing assets. Those banks were constrained by persistent liquidity problems, poor asset quality and unprofitable operations. The major problems of Nigerian banks at the time, according to Adamu (2009) and Nnaji (2011), included:

- High concentration of the banking sector – the ten largest banks accounted for about 50% of the industry's total assets and liabilities.
- Weak corporate governance, evidenced by high turnover of board and management staff
- Late or non-publication of annual accounts, inadequate reporting and non-compliance to regulatory requirements
- Gross insider abuse, resulting to huge non-performing credits
- Negative capital adequacy ratios
- Weak capital base – most banks had capitalization of less than US\$10 million, with the largest bank having a capital base of about US\$240 million.
- Huge operational costs – the small size of most of the banks resulted in heavy fixed costs and operating expenses, and the concentration of most bank branches in a few commercial centers, led to very high average cost for the industry. This in turn had implications for the cost of financial intermediation, and the spread between deposit and lending rates.
- Over-dependence on public sector deposits, leading to problems of volatility in liquidity.
- Disintermediation – as evidenced by preference of most banks for businesses that give quick-returns to capital (e.g. foreign exchange dealings, lending to oil and gas, imports, etc), and
- Neglect of small and medium class savers

Based on these factors, the Central Bank of Nigeria, led by the new Governor at the time, Professor Charles Soludo, embarked on the consolidation of the banking system in 2004, wherein the minimum capital base of the banks was raised from ₦5 billion (~£20 million) to ₦25 billion (~£100 million), with December 31st, 2005 set as deadline for compliance. The recapitalization process was introduced as part of a reform agenda aimed at saving the ailing banking sector and give it the flexibility needed to support Nigeria's ambitions of becoming a major player on the world stage, ranking amongst the world's top 20 economies by 2020. The recapitalization exercise reduced the number of banks from 89 to 25. By 2008, there were 24 banks remaining – including 6 that had met the recapitalization requirements, and 18 created

from mergers and acquisitions (CGI, 2010). A total of ₦ 406.4 billion (~£1.62 billion) was reported as funds raised by banks from the capital markets (Adamu, 2009). In addition, the process attracted foreign capital inflow of over US\$652 million (Anyanwu, 2010).

Prior to the recapitalization, majority of the banks were under private domestic ownership with the exception of 3 foreign-owned banks operating in the country (Citibank, Standard Chartered and Stanbic Bank). Following the consolidation, banks' balance sheets expanded, most of them venturing into universal banking and expanded cross-border transactions into other African countries, United States and Europe. Credit to private sector equally increased and all other developmental indicators of the banking sector increased as a result of the consolidation exercise. Financial depth (measured by MS/GDP ratio) and intermediation into the private sector (measured by credit to private sector/GDP) increased substantially (See table 3.1.).

Table 3.1. Indicators of Banking Sector Performance after Consolidation

Indicator	Pre-consolidation (2004)	Post-consolidation (2008)
Number of banks	89	24
No of bank branches	3,382	4,500
Total Asset of Banks (US\$ billion)	24	51.1
Loan to Deposit Ratio	85	98
Cash Reserve Ratio	59	61
Capital Requirements (₦ billion)	5	25
M2/GDP	19.8	37
Private Sector Credit/GDP	21	37
Total NPL/Total Loan Portfolio	21.9	6.3
MI/M2	32	16

Source: Nnaji (2011) – CBN *Economic and Financial Review*, Vol. 29, No.1

The liquidity generated by the inflow of funds into the banks induced interest rate to fall significantly, while an unprecedented 30.8% increase was recorded in lending to the real sector in 2005 (Anyanwu, 2010). With a higher single obligor limit, Nigerian banks now had a greater capacity to finance big-ticket transactions. More banks now had access to credit from foreign banks, while the capital market deepened. The stock market became active and total market capitalization increased markedly from 24% to 41.8% as at December, 2006 (Adamu, 2009). Ownership structure was now diluted, helping to curb problems posed by insider abuse

and weak corporate governance structures. The banks have begun to enjoy economies of scale, and consequently, are passing on the benefit in the form of reduced cost of banking transactions. The ratio of non-performing loans had declined from 21.9% pre-consolidation to 6.3% post-consolidation. In general, the reform efforts had engendered stable macroeconomic environment evidenced by low inflation and relatively stable exchange rate (Anyanwu, 2010).

However, not long after the consolidation, the global financial and economic crises came in 2008, leading to the collapse of many financial institutions across the globe. It had been hoped that Nigeria's economy would be decoupled enough from the troubled economies of the developed world to avoid the global financial crisis. Before the recession, Oceanic Bank had jumped 565 places in the Banker's Top 1,000 Banks, from 875 in 2007 to 310 in 2008, while amassing US\$ 1.75 billion in Tier 1 capital. Other banks such as Guaranty Trust Bank had soared up 371 places to 369, while United Bank for Africa had leapt up 484 places to 392. The sector as a whole made a healthy profit of US\$ 3.1 billion (CGI, 2010). There were 12 Nigerian banks in the Banker's list of top 20 African banks, with Zenith Bank and First Bank of Nigeria leading the charge. The financial crisis reduced the gains made during the consolidation of the Nigerian banking sector. In late 2008, the recession hit Nigeria's stock exchange hard, wiping out 60% of its value almost overnight. As a result, some banks faced serious liquidity problems owing to their significant exposure to the capital market in the form of margin trading loans, which stood at about ₦900 billion (~£3.6 billion) as at end-December 2008. The amount represented about 12% of the aggregate credit in the industry or 31.9% of shareholders' funds. Furthermore, rising oil prices also meant that a section of the banking industry heavily exposed to the oil and gas sector was badly affected. As at end-December 2008, banks' total exposure to the oil and gas industry stood at over ₦754 billion (~£3 billion), representing over 10% of the industry total and over 27% of the shareholders' funds (Anyanwu, 2010).

By mid-2009, it was clear that many banks were struggling to survive in the face of the economic storm. A new Governor for the CBN, Sanusi Lamido Sanusi, assumed office in June 2009, and in August 2009, an audit of the banking sector saw the heads of Afribank, Intercontinental Bank, Union Bank, Oceanic Bank and Finbank removed. The Economic and Financial Crimes Commission (EFCC) charged sixteen officials with a range of offences including corporate fraud, lending to fake companies, giving loans to companies they had

personal interest in and conspiring with stockbrokers to boost share prices for private gains. In an effort to prevent a systemic crisis, the CBN injected the sum of ₦620 billion (~£2.48 billion) into the affected banks and changed the management of the banks. Arrangements were also made to recover non-performing loans from banks' debtors, while guaranteeing all foreign credits and correspondent banking commitments of the affected banks. Furthermore, the CBN proposed the establishment of the Asset Management Corporation of Nigeria (AMCON). The AMCON as a resolution vehicle was designed to soak up the non-performing loans of the troubled banks. The AMCON bought over toxic assets in excess of ₦1.2 trillion (~£4.8 billion) in exchange for government bonds. This arrangement helped to free up the affected banks' balance sheet and made it easier for them to resume lending to the real sector.

By August 2011, the Central Bank invited new investors to take over the assets and some liabilities of the affected banks and new ownership was named for the banks. Among the new emerging banks are Main Street Bank Limited (acquired Afribank Plc), Keystone Bank (acquired Bank PHB), and Enterprise Bank (acquired Spring Bank). Some existing banks also took over the other failed banks, including Access Bank (acquired Intercontinental Bank), FCMB (acquired Finbank), Ecobank (acquired Oceanic Bank), and Sterling Bank (acquired Equatorial Trust Bank). The number of banks as at December 2013 stood at 24 banks, with a few new players also joining the list of banks licensed as either national or regional banks.

Brief Profile and Overall Performance of Nigerian Banks²¹

Currently, the top 5 banks in Nigeria (known as Tier 1 banks) – Zenith Bank, First Bank, GTB, UBA, and Access Bank dominate Africa's highly competitive banking industry and account for about 54% of Nigeria's total banking sector assets, which stood at ₦22.5 trillion (~£90 billion) as at June 2013 (Ecobank, 2013a; Chima, 2013). In 2011, these top five banks had a combined balance sheet (including contingents) of ₦12.9 trillion (~£51.6 billion). In addition, these five banks account for a sizeable portion of lending activities undertaken by the industry. With this concentration level, these five banks provide a representative view of Nigeria's banking sector. Below is a brief profile of each of the five largest banks in Nigeria.

²¹ Adapted from Ventures Africa (2012)

Zenith Bank Plc: Incorporated as Zenith Bank Limited in May 1990 and headquartered in Lagos, the bank was licensed to carry on the business of banking the next month. The name was changed to Zenith Bank Plc in 2004 to reflect its status as a public limited liability company. The bank's shares were listed on the Nigerian Stock Exchange (NSE) that year following a highly successful Initial Public Offering (IPO). Nigerian institutions and individuals numbering over 1 million currently own the shares of the bank. The bank has over 330 branches and 125 cash offices in Nigeria. The latest ranking of the Top 1,000 Global Banks by the Influential Bankers placed Zenith as the largest bank in Nigeria and the seventh biggest in Africa. It has US\$2.4 billion of Tier-1 capital.

First Bank of Nigeria Plc: First Bank traces its history back to the first major financial institution founded in Nigeria, hence its name. The bank is the largest retail lender in the nation. While most banks gather funds from consumers and loan it out to large corporations and multinationals, First Bank has created a small market for some of its retail clients. At the end of December 2013, the bank had assets totaling approximately US\$19.1 billion. The bank's profit after tax for the same period was approximately US\$467.6 million. The bank maintains a subsidiary in the United Kingdom, FBN Bank (UK), which has a branch in Paris, and also has representative offices in South Africa and China. It is Nigeria's second biggest bank with US\$2.36 billion of Tier-1 capital.

Guaranty Trust Bank Plc: Registered in 1990 by Central Bank of Nigeria, GTB Plc was incorporated as a private limited liability company wholly owned by Nigerian individuals and institutions. The approval as a commercial bank followed the same year and operations were started in February 1991. It listed on the NSE in 1996, and became licensed as a universal bank in 2002. In 2007 it became the first sub-Saharan African bank and first Nigerian joint stock company, listed on the London Stock Exchange and Deutsche Börse. The IPO raised US\$750 million. In the same year, they successfully placed Nigeria's first private Eurobond issue on the international capital markets. GTB Plc is a partner of Morgan Stanley and BNP Paribas and has Tier-1 capital of \$1.48 billion.

Access Bank Plc: With the purchase of 75% equity stake in Intercontinental Bank Plc, Access Bank Plc attained the fourth position in the Nigerian banking industry by total assets and

contingents, with US\$1.05 billion of Tier-1 capital. It has an asset base in excess of US\$11.1 billion, as of December 2013. The shareholders' equity in the bank is valued at approximately US\$2.33 billion. The purchase of Intercontinental goes alongside an international expansion drive, which has seen the bank gain subsidiaries in Burundi, Côte d'Ivoire, the Democratic Republic of the Congo, Ghana, Rwanda, Sierra Leone, The Gambia, Tanzania, United Kingdom, and Zambia.

United Bank for Africa Plc: UBA is a Nigerian financial services provider with subsidiaries in 20 sub-Saharan countries and representative offices in France, the United Kingdom and the United States. It offers universal banking services to more than 7 million customers across 750 branches. Formed by the merger of the commercially focused UBA and the retail focused Standard Trust Bank in 2005, the Bank purports to have a clear ambition to be the dominant and leading financial services provider in Africa. Listed on the Nigerian Stock Exchange in 1970, UBA claims to be rapidly evolving into a pan-African full service financial institution. The Group adopted the holding company model in July 2011. As of December 2013, the valuation of UBA Group's total assets was approximately US\$13.5 billion, with shareholders' equity of about US\$1.57 billion. It has over US\$1 billion of Tier-1 capital.

Following the tier 1 banks category are the tier 2 banks, which include – Diamond Bank, Stanbic IBTC, FCMB, Skye Bank, Fidelity Bank, Sterling Bank, and others. These tier 2 banks tend to have access to a wider pool of cheap retail deposits, though in general, they incur higher cost of funds than tier 1 banks (tier 1 banks reported an average cost of funds of 3.6%, while tier 2 banks reported an average of about 5.3% for the first half of 2013 – Chima, 2013). Together, 13 Nigerian banks made it to the 2013 list of top 1,000 World Banks Ranking of the Banker Magazine of the Financial Times Group, London, UK. The 13 banks that made the ranking include: Zenith Bank (287), First Bank (367), GTB (417), Access Bank (506), UBA (553), Ecobank, Fidelity Bank, FCMB, Skye Bank, Diamond Bank, Stanbic IBTC, Union Bank and Standard Chartered Bank (Omoh, 2013). Table 3.2 and 3.3 rank the top banks in Nigeria according to various performance measures as at 2013 year-end.

Table 3.2. Ranking of Top Nigerian Banks by Key Performance Indicators – 2013 F/Y

Rank by PBT	Bank	Profit Before Tax (₦ billion)	Shareholders' Fund	Total Assets	Gross Earnings	Customer Deposits
			(N billion)	(N billion)	(N billion)	(N billion)
Tier I Banks						
1	Zenith Bank	110.59	509.3 [1]	3,140 [2]	351.4 [1]	2,270 [2]
2	GTB	107.09	332 [3]	2,100 [4]	242 [4]	1,440 [4]
3	First Bank	76.85	350.71 [2]	3,250 [1]	284.44 [2]	2, 570 [1]
4	UBA	51.84	259.54 [5]	2,220 [3]	214.27 [3]	1,797 [3]
5	Access Bank	44.9	172.4 [7]	1,840 [5]	207 [5]	1,330 [5]
Tier II Banks						
6	Diamond Bank	32.1	138 [10]	1,500 [6]	181 [6]	1,200 [6]
7	Stanbic IBTC	24.61	97.6 [12]	763 [13]	111.2 [12]	416.3 [13]
8	FCMB	18.2	144 [9]	1,008 [10]	131 [8]	715.2 [10]
9	Skye Bank	17.13	120.4 [11]	1,110 [8]	127 [10]	996 [8]
10	Ecobank	11.65	92.46 [13]	1,146 [7]	177 [7]	1,118 [7]
11	Fidelity Bank	9.02	167 [8]	1,080 [9]	127 [9]	806.32 [9]
12	Sterling Bank	9.31	321.75 [4]	909.4 [11]	92 [13]	570.51 [11]
13	Union Bank	4.2	188 [6]	882 [12]	121 [11]	480 [12]
14	Wema Bank	1.9	41 [14]	331 [14]	26 [14]	217 [14]

Source: Various Bank Annual Reports (2013) *Ranks are in parentheses []

In the area of profit before tax (PBT), the Tier-1 banks accounted for 76% of total profits of the 14 banks under review, with Zenith Bank emerging as industry leader, declaring ₦110.59 billion (~£440 million) as PBT. In second position was GTB, which recorded a PBT of ₦107.09 billion (~£428 million), while First Bank came third with a PBT of ₦76.85 billion (~£307 million). Using shareholders' funds as the barometer of banks' performance showed that the Tier-1 banks accounted for 65.4% of the 14 banks that were reviewed. Again, Zenith Bank tops with ₦509.3 billion (~£2.03 billion), while Wema Bank occupied the bottom of the table with shareholder funds of ₦41 billion (~£164 million). However, in terms of total assets, First Bank emerged top place with ₦3.25 trillion (~£13 billion), while Zenith Bank, and UBA occupied the 2nd and 3rd with ₦3.14 trillion and ₦2.22 trillion respectively.

In terms of key profitability ratios (see table 3.3), GTB is clearly the leader in the Nigerian banking space as the lender tops the charts with respect to Return on Average Equity (ROAE), and Return on Average Assets (ROAA) of 27.77% and 4.85% respectively. The bank's remarkable efficiency is revealed by its ability to churn out ₦107.09 billion in pretax profits (PBT), almost double UBA's ₦56.05 billion, even as its gross earnings of ₦242.2 billion were less than UBA's gross earnings of ₦264.6 billion. On the flip side, Union Bank is the worst

performer (among the group), returning just 2.83% of ROAE, and 0.58% on ROAA. Union Bank also has a relatively low overall PBT of ₦4.2 billion, on gross earnings of ₦103 billion. The bank's underperformance is more visible when compared with fellow tier two lender Stanbic IBTC, which made ₦24.6 billion in pretax profits on ₦111.2 billion of revenues for 2013.

Table 3.3. Top Nigerian Banks by Key Performance Ratios – 2013 F/Y

	Bank	ROAA	ROAE	Loan to Deposit	Capital-Asset ratio (CAR)	Net Interest Margin (NIM)
<i>Tier I Banks</i>						
1	GTB	4.85% [1]	27.77% [1]	59.52%	16.23% [2]	7.25% [2]
2	Zenith Bank	3.59% [2]	22.57% [5]	54.17%	17.7% [1]	6.60% [4]
3	First Bank	2.18% [6]	22.75% [3]	68.83%	11.96% [5]	7.10% [3]
4	UBA	2.50% [4]	21.61% [6]	44.34%	7.65% [10]	4.97% [10]
5	Access Bank	1.93% [7]	17.79% [7]	60.41%	11.6% [6]	4.14% [11]
<i>Tier II Banks</i>						
6	Stanbic IBTC	2.89% [3]	22.67% [4]	92.21%	11.5% [7]	5.14% [9]
7	Diamond Bank	2.47% [5]	24.23% [2]	53.57%	7.31% [11]	8.21% [1]
8	FCMB	1.67% [8]	11.61% [9]	62.99%	12% [4]	5.86% [7]
9	Skye Bank	1.46% [9]	14.10% [8]	66.79%	9.9% [9]	5.63% [8]
10	Fidelity Bank	0.77% [11]	4.75% [11]	52.84%	15.67% [3]	3.09% [12]
11	Ecobank	0.84% [10]	7.52% [10]	55.96%	11.14% [8]	6.35% [5]
12	Union Bank	0.58% [12]	2.83% [12]	48.12%	6.35% [12]	6.22% [6]

Source: Various Bank Annual Reports (2013); Omoh (2013); Akanbi (2014); Author's Calculations

*Ranks are in parentheses []

Having understood the history of Nigeria's banking sector since pre-independence to the post-consolidated banking era, it is easier to examine the trends in Bank lending to SMEs in Nigeria.

3.3. Trends in Commercial Banks' Lending to SMEs in Nigeria

As discussed in chapter 2, every enterprise including SMEs is financed either through debt or equity or a combination of both. Both types of financing are usually sourced from either the informal finance sector or the formal finance sector (Gbandi and Amissah, 2014). The

Nigerian credit market can be broadly categorized into the formal and informal sectors, based on how structured the lending process is. The informal finance sector consists of borrowing from friends, relatives, moneylenders and cooperatives. Another traditional source of enterprise financing for SMEs is through personal savings or reserves (in case of corporate organisations). The formal finance sector is made of up formal financial institutions such as commercial banks, microfinance banks and development banks. The formal sector of the credit market is largely driven by the deposit money banks (DMBs). The players in the credit market are depicted in figure 3.1 below.

Figure 3.1: Structure of the Nigerian Credit Market



Source: FSS 2020 – The Nigerian Credit Market²²

All of these institutions provide one form of credit or the other. The deposit money banks (DMBs) dominate the market, representing between 85% and 90% (by loan value) of the credit data captured in the FSS 2020 survey. The credit market in Nigeria can still be described as under-developed with low level of credit penetration in the informal sector of the economy. The weak creditor rights and virtual inability to enforce contracts makes lending a risky business (FSS 2020). More importantly is the weak credit infrastructure base such as

²² <http://www.fss2020.gov.ng/CREDITMSME/SitePages/Home.aspx> (Accessed 29/09/2014)

street addresses, multiplicity of languages, no identification documentation²³, constant power outages and expensive telecommunication which made it difficult to check personal and corporate records. As a result most lending relies on local market and community knowledge, which restricts the ability of banks to scale up lending to support economic growth. It is therefore widely believed that credit bureaus would improve credit repayment rates by reducing moral-hazard problems, as well as support access to credit. The ability of credit bureaus to significantly improve access to credit, however, critically depends on the inclusion of information from the non-bank sector that requires both institutional and legal framework. The key resource of the bureau is data, which presents major challenges.

3.3.1. Financing Gap for SMEs in the Post Consolidated Banking Sector

In Nigeria, the formal financial institutions, including the CBN and international development agencies have played very prominent roles in the financing of SMEs over the years. In recent times, however, commercial banks, despite being well capitalized and being the biggest source of finance for the real sector, have continued to reduce their involvement with SMEs owing to the challenges associated with the poor lending infrastructure among other factors. Given the consolidation of the banking sector in Nigeria, which has led to the emergence of stronger and more financially stalwart banks, one would have expected a progressive increase in credit allocation to SMEs. However, as shown in Table 3.4 and figure 3.2, the proportion of total commercial banks' loans and advances to the economy accounted for by SMEs between 1992 and 2012 has been on a very sharp decline. Between 1992 and 1996, during the period of mandatory banks' credit allocation of 20% of total credits to SMEs, the mean percentage of loans granted to SMEs was 26.6%. With the abolishment of the mandatory 20% allocation to SMEs in 1996, the immediate pre-consolidation period of 1997 to 2005 saw the downward trend of credit allocation to SMEs from 16.96% in 1997 to 2.7% in 2005. In spite of the emergence of very large banks after the consolidation period, SME lending as a percentage of total credit in the economy plummeted further from 2.7% in 2005 to a meager 0.14% in 2012.

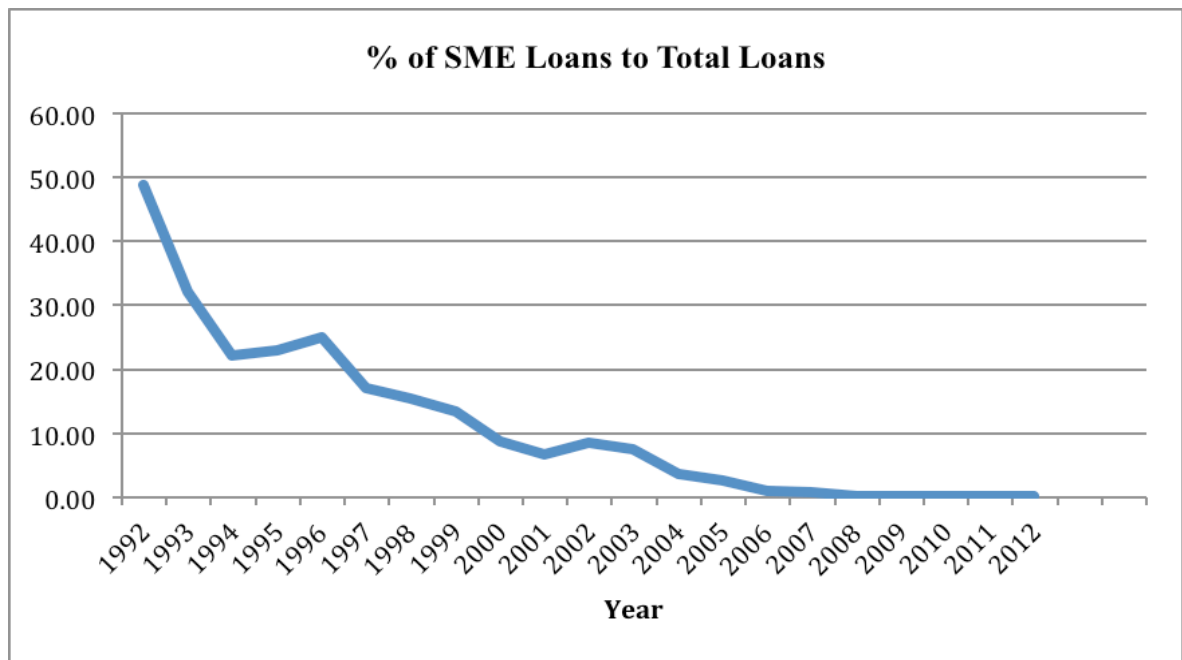
²³ In a bid to solve Nigeria's customer identification problems, the Central Bank of Nigeria has recently (since February 2014) introduced the Bank Verification Number (BVN), which is a centralized biometric identification system aimed at giving customers a unique number that can be verified across the Nigerian banking industry.

Table 3.4. Ratio of Commercial Banks' Loans to SMEs to Total Credits (1992-2012)

Year	Total Loans to the Private Sector (₦' Million)	Loans to SMEs (₦' Million)	% of SME Loans to Total Loans
1992	41,810	20,400	48.8
1993	48,056	15,462.90	32.2
1994	92,624.00	20,552.50	22.2
1995	141,146.00	32,374.50	22.9
1996	169,242.00	42,302.10	25
1997	240,782	40,844.30	17
1998	272,895.50	42,260.70	15.5
1999	353,081.10	46,824.00	13.3
2000	508,302.20	44,542.30	8.7
2001	796,164.80	52,428.40	6.6
2002	954,628.80	82,368.40	8.6
2003	1,210,033.10	90,176.50	7.5
2004	1,519,242.70	54,981.20	3.6
2005	1,898,346.40	50,672.60	2.7
2006	2,524,297.90	25,713.70	1.02
2007	4,813,488.80	41,100.40	0.85
2008	7,725,818.90	13,383.90	0.17
2009	9,667,876.70	16,366.50	0.17
2010	9,198,173.10	12,550.30	0.14
2011	9,614,445.80	15,611.70	0.16
2012	15, 285, 300	21,399.40	0.14

Source: CBN (2008, 2011a) - Statistical Bulletin; CBN (2012) - Financial Stability Report

Following the analyses carried out by Adamu (2009:42-47), the trends in commercial banks' lending to SMEs can be better appreciated when we examine three periods of SME financing policies by the monetary authorities: (i) Period of mandatory banks' credit allocations of 20% of total credits to SMEs (1992-1996) (ii) Banks' pre-consolidation period (1997-2005) and (iii) Banks' post-consolidation period (2006-2012)

Figure 3.2. Commercial Bank Loans to SMEs as % of Total Credit to Private Sector

Source: Derived from Table 3.4.

Period of Mandatory Banks' Credit Allocation to SMEs (1992-1996)

The Central Bank of Nigeria's indirect financing of SMEs through the use of monetary policy instruments started in 1992. The monetary policy stance of the CBN classified SMEs with agriculture, as the "preferred" sector of the economy. Consequently, banks were asked to allocate a minimum of 20% of their aggregate private sector credit to SMEs. During that year, total credit to the economy stood at ₦41.8 billion (see Table 3.5). Of this amount, ₦20.4 billion (48.8%) was loaned to SMEs. The level of compliance, however, declined progressively in subsequent years. For example, whereas total credit to the economy increased to ₦48 billion in 1993 and ₦92.6 billion in 1994, the share of credit to SMEs declined to 32.2% (₦15.5 billion) and 22.2% (₦20.6 billion) respectively. In 1995, aggregate credit to the economy rose further to ₦141.1 billion, whereas the share of SMEs increased less than proportionately to ₦32.4 billion, representing 22.9% of total credit in that year. By 1996 when the announcement abolishing the mandatory banks' credit allocations to SMEs (including agriculture) was made on October 1, total credit to the economy stood at ₦169.2 billion out of which ₦42.3 billion or 25% was loaned to SMEs.

Table 3.5. Calculation of Mean Percentage of Loans Granted to SMEs (1992-1996)

Year	Total Loans to Economy (₦' m)	Loans Granted to SMEs	
		Amount (₦' m)	% of Total
1992	41,810	20,400	48.8
1993	48,056	15,462.90	32.2
1994	92,624	20,552.50	22.2
1995	141,146	32,374.50	22.9
1996	169,242	42,302.10	25
Period Total = 492,878.0		131,092.0	Mean = 26.6%

Source: Derived from Table 3.4

Cumulative loans to the economy during the five years period, 1992-1996, amounted to ₦492.9 billion while cumulative total credit to SMEs stood at ₦131.1 billion, representing a mean ratio of 26.6% for the period (i.e. $131,092/492,878 \times 100$). It is striking to note that the mean ratio of credit granted to SMEs during the period was well above the mandatory 20% prescribed by the Monetary Authorities for the “preferred sector”. The mandatory banks’ credit allocations period was biased towards SME financing and may therefore be considered as not a good yardstick for comparing the normal market-determined trend in SME financing before and after banks’ consolidation. However, the period does offer useful insight into the demand by SMEs and possible ways that could assist the economic regulators in boosting SME financing through the banking system.

Banks’ Pre-consolidation Period (1997-2005)

The Federal Government policy on liberalization under the structural adjustment programme (SAP) intensified in 1996. Consequently, all forms of restrictions and controls were dismantled to pave way for a free market economy. Therefore, all monetary policies that hitherto dished out directives to banks were abolished. The effect of this policy became manifest in banks’ lending preferences from 1997. For example, while aggregate credit to the economy in 1977 almost doubled to ₦240.8 billion, credit to SMEs declined to ₦40.8 billion, representing a sharp decrease to 17% of the total credit.

Total credit to the economy more than tripled to ₦796.2 billion and ₦954.6 billion in 2001 and 2002, but the share of SMEs declined further to 6.6% and 8.6% respectively. The figures for 2003 and 2004 passed a trillion naira mark and stood at ₦1.21 trillion and ₦1.52 trillion with SME share of ₦90.2 billion (7.5%) and ₦54.98 billion (3.6%) respectively. At the

threshold of consolidation in 2005, aggregate credit to the economy peaked for the period at ₦1.899 trillion. Yet the share of SME declined further to 2.7% at an almost static figure of ₦50.7 billion.

Table 3.6. Calculation of Mean Percentage of Loans Granted to SMEs (1997-2005)

Year	Total Loans to Economy (₦' m)	Loans Granted to SMEs	
		Amount (₦' m)	% of Total
1997	240,782	40,844.30	17
1998	272,895.50	42,260.70	15.5
1999	353,081.10	46,824.00	13.3
2000	508,302.20	44,542.30	8.7
2001	796,164.80	52,428.40	6.6
2002	954,628.80	82,368.40	8.6
2003	1,210,033.10	90,176.50	7.5
2004	1,519,242.70	54,981.20	3.6
2005	1,898,346.40	50,672.60	2.7
Period Total = 7,754, 476.0		505, 098.4	Mean = 6.5%

Source: Derived from Table 3.4

Cumulative credit to the economy during the nine-years period, 1997-2005 amounted to ₦7,754.5 billion, with accumulated loans to SMEs totaling ₦505.1 billion, representing a mean ratio of 6.5% for the period (i.e. $505,098.4/7,754,476.0 \times 100$).

Banks' Post Consolidation Period (2006-2012)

According to recent figures from the CBN Financial Stability Report published December 2012, seven years after the banking consolidation, aggregate credit to the economy increased geometrically to more than 7 times its pre-consolidation levels. On the contrary, however, credit to SMEs declined by more than 70% in value. Total credit in the economy increased from ₦2.5 trillion in 2006 to ₦7.7 trillion in 2008 and then rose further to over ₦9.6 trillion between 2009 and 2011. In 2012, total credit to the economy increased by more than 60% to ₦15.2 trillion (~£60.8 billion). Conversely, total credit granted to SMEs declined sharply from ₦25.7 billion in 2006, ₦41.1 billion in 2007 to ₦16.3 billion in 2009 and dropped further to ₦15.6 billion in 2011. In 2012, it however, increased to ₦21.3 billion but not in the same proportion with the increase in total credit to the economy.

Table 3.7. Calculation of Mean Percentage of Loans Granted to SMEs (2006-2012)

Year	Total Loans to Economy (₦' m)	Loans Granted to SMEs	
		Amount (₦' m)	% of Total
2006	2,524,297.90	25,713.70	1.02
2007	4,813,488.80	41,100.40	0.85
2008	7,725,818.90	13,383.90	0.17
2009	9,667,876.70	16,366.50	0.17
2010	9,198,173.10	12,550.30	0.14
2011	9,614,445.80	15,611.70	0.16
2012	15, 285, 300	21,399.40	0.14
Period Total = 58, 829, 401.2		146,125.9	Mean = 0.25%

Source: Derived from Table 4.4

Consequently, the post-consolidated loans allegedly granted to the economy during the seven years period, 2006-2012, accumulated to a whopping sum of ₦58.8 trillion (~£235 billion), whereas accumulated total credit granted to SMEs during the post-consolidation period declined to ₦146.1 billion (~£584 million), representing a mean ratio of 0.25 for the period. This confirms the findings by many researchers that the more banks are capitalized, the fewer loans they grant to SMEs (e.g. Peek and Rosengren, 1995a; Berger, Saunders, Scalise and Udell, 1998; Avery and Samolyk, 2004). Although, the establishment of several micro finance banks (MFBs) in Nigeria in 2005 has offset some part of lending to MSMEs especially the low-end micro businesses, the financing gap to SMEs is still very huge. Therefore, the expectation that banks' consolidation would improve SME access to banking system finance without intervention by the authorities was not upheld.

Post-Consolidation Credit Gap to SMEs (2006-2012)

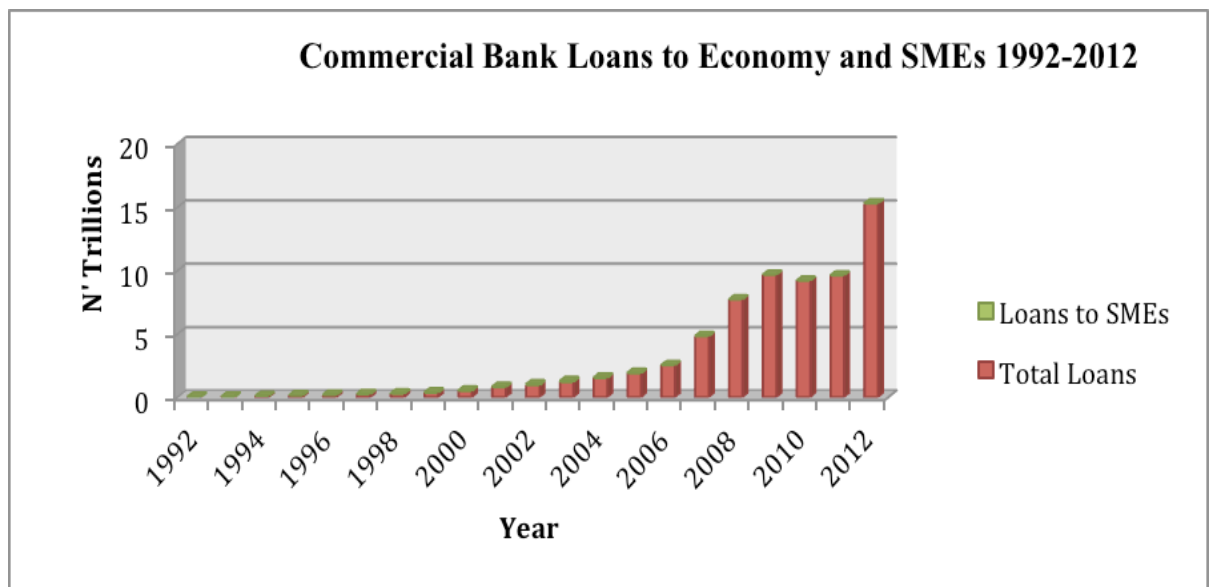
The analysis in this sub-section is aimed at determining the quantum of credit denied the SME sector in the post consolidated period (2006-2012) based on trends in credit granted to the sector in the past two periods (1992-1996 and 1997-2005). The analysis is not necessarily based on the credit needed by SME sub-sector that was not granted by the post-consolidated banks during the period. To the researcher's knowledge, no research has been conducted to estimate the accurate figure on the amount of credit required by the sector. Calculating accurate figures for the funding cap is actually difficult to do because of the removal of the mandatory credit allocation to SMEs in 1996 and the banking consolidation of 2005, both of

which have changed the structure of banking and credit allocation in Nigeria over the past two decades.

This study therefore used the past figures to calculate the mean percentages of the credits granted in the preceding periods with a view to extrapolating the projected credit gap in the post-consolidated period (2006-2012). The mean is very important in extrapolating the credit gap to SMEs because it is the only rate that when multiplied to the total credit granted to the economy in a specified period that can equate the cumulative loans granted or should have been granted to the SME sub-sector in the given period.

Figure 3.3 below is a pictorial presentation of the annual disbursement of loans to the economy and the portions that went to the SME sub-sector from 1992 to 2012.

Figure 3.3. Commercial Banks' Loans to the Economy and SMEs (1992-2012)



A summary of the aggregate loans to the economy and the ratios to the SME sub-sector for the various periods is presented below:

Table 3.8 Aggregate Loans to Economy and SMEs by Period (1992-2012)

Periods	Aggregate Loans to Economy (N' Million)	Aggregate Loans to SMEs (N' Million)	Mean (%)
1992-1996	492, 878.0	131,092.00	26.6
1997-2005	7,754,476.60	505,098.40	6.5
2006-2012	58, 829, 401.2	146,125.90	0.25

Aggregate loans to the economy rose sharply from ₦492.9 billion disbursed during the “mandatory credit allocation period” (1992-1996) to ₦7,754.5 billion in the “pre-consolidation period” (1997-2005) and multiplied by more than seven times to ₦58,829.4 billion during the “post-consolidation period” (2006-2012). In numerical terms; aggregate loans granted to SMEs rose from ₦131.1 billion to ₦505.1 billion in the pre-consolidation period, but declined to ₦146.1 billion in the post-consolidation period. Accordingly, the mean percentage share of aggregate loans to SMEs declined from 26.6% to 6.5% in the pre-consolidation period and further crashed to 0.25% after banks’ consolidation from 2006-2012.

We can reasonably estimate the quantity of credit withheld from the SME sub-sector by the banking system in the “post-consolidation period”, 2006-2012 from the above computations. In doing this, we assume that the mean percentage credit granted to the economy during the “pre-consolidation period” (1997-2005) – i.e. 6.5% would have continued, had appropriate financing arrangements been put in place by the Monetary Authorities. Total credit denied the sector is computed in Table 3.9 below:

Table 3.9 Financing Gap to SMEs, 2006-2012 (₦’ Million)

Year	Credit to Economy [1]	Mean (%) [2]	Credit Due to SMEs [3]	Actual Credit Granted to SMEs [4]	Credit Shortfall [3] – [4]
2006	2,524,297.90	6.5	164,079.40	25,713.70	138,365.70
2007	4,813,488.80	6.5	312,876.80	41,100.40	271,776.40
2008	7,725,818.90	6.5	502,178.20	13,383.90	488,794.30
2009	9,667,876.70	6.5	628,411.90	16,366.50	612,045.40
2010	9,198,173.10	6.5	597,881.30	12,550.30	585,331.00
2011	9,614,445.80	6.5	624,938.90	15,611.70	609,327.20
2012	15,285,300	6.5	993,544.50	21,399.40	972,145.10
Total	58,544,101.2	6.5	3,805,366.60	146,125.90	3,659,240.70

The analysis above clearly indicates that in 2006, the capitalized banks under-disbursed to SMEs the sum of ₦25.7 billion instead of ₦164.1 billion, representing a shortfall of ₦138.4 billion. In 2008, only ₦13.4 billion was disbursed instead of ₦502 billion, representing a shortfall of ₦488.8 billion. In 2012, ₦993.5 billion was due for disbursement to SMEs, but only ₦21.4 billion was actually disbursed, leaving a credit gap of ₦972.1 billion.

Consequently, the aggregate credit denied the SME sub-sector during the post-consolidation period (2006-2012) accumulated to ₦3.6 trillion (~£14.6 billion) as at end-December, 2012. It should however be noted that the projection of the funding gap as analysed here is only a guesstimate rather than actual substantive figures given that it is based on the assumption that the 6.5% pre-consolidation average share of SME loans to total loans should have at least been sustained through the post-consolidation era (2006 and beyond).

A number of reasons have been outlined in chapter 2 for why banks reduce lending to SMEs after consolidation (i.e. mergers and acquisition). These include increased post-merger operational costs leading to higher costs of SME loans (Strahan and Weston, 1998; Stein, 2002) and the need to manage liquidity risks and loan diversification more efficiently on a larger scale rather than managing risks on a small scale through SME loans. In addition, where a merger is motivated by the acquisition of low-cost deposits or expansion of geographic market reach, this may discourage lending to SMEs (Peek and Rosengren, 1995a). Though the main reasons for the consolidation in Nigeria is to raise the capital base of banks, the resultant outcome of the exercise was more financially robust, geographically diverse large banks that unequivocally reduced their appetite for SME loans. This is shown by the drastic reduction in the proportion of total lending in the economy accounted for by SMEs from 6.5% in the period before consolidation (1997-2005) to 0.25% in the period after consolidation (2006-2012).

3.3.2. Government Initiatives to Boost Commercial Lending to SMEs

Given the constraints faced by SMEs in Nigeria, the government has over the years taken a number of steps aimed at improving the prospects of SMEs, in terms of access to bank credit. These steps include the establishment of many agencies and schemes. According to Adamu (2009), government intervention in SME finance comes in two main ways: (i) institutional arrangements, and (ii) financing programs.

(I) Institutional Arrangements

All over the world, governments create enabling institutions that directly or indirectly provide finance for SME operations. Some of the institutions established by the Nigerian government to provide direct finance for SME operations over the years, include the following:

Bank of Industry (BOI)

The Bank of Industry Limited (BOI) is Nigeria's oldest, largest and most successful development financing institution. It was reconstructed in 2001 out of the Nigerian Industrial Development Bank (NIDB) Limited, which was incorporated in 1964. The core mandate of BOI is to provide financial assistance for the establishment of large, medium and small projects as well as expansion, diversification and modernization of existing enterprises and rehabilitation of ailing industries. The bank is currently embarking on a ₦19.8 billion MSME fund through the bank's cooperative lending scheme. This is aimed at developing the MSME sector in each of the participating states in Nigeria. The average interest rate is 5%. The bank also has a *bottom of the pyramid scheme*, which is a new initiative aimed at deepening the bank's credit offerings to micro entrepreneurs through Microfinance banks in each state (see BOI website)²⁴.

Bank of Agriculture (BOA)

Bank of Agriculture (BOA) is the nation's premier agricultural and rural development finance institution. As a development finance institution, it is government owned (CBN 40% and Federal Ministry of Finance 60%), and supervised by Federal Ministry of Agriculture. The Bank was incorporated as Nigerian Agricultural Bank (NAB) in 1973 and was renamed three times, first in 1978, as Nigerian Agricultural and Cooperative Bank (NACB), second in 2000 as Nigerian Agricultural Cooperative and Rural Development Bank Limited (NACRDB), and subsequently in 2010 to Bank of Agriculture Limited (BOA).

The bank provides affordable credit facilities to segments of the Nigerian society who have little access to the services of conventional banks. The bank accepts savings deposit from customers and encourage banking habits at the grass roots. The BOA's loan rate for microcredit agricultural firms is 12%, while its rate for working capital and for SMEs involved in agricultural production is 14%. As part of the bank's loan conditions, SME borrowers must have a minimum of 6 months deposit account relationship with the bank. The bank's average deposit rate is 2% (see BOA website)²⁵.

²⁴ <http://boinigeria.com/state-msme-fund/> (accessed 16/08/2014)

²⁵ <http://www.bankofagricultureng.com/aboutus/Default.aspx> (accessed 16/08/2014)

Nigeria Export-Import Bank (NEXIM)

The Nigerian Export-Import Bank (NEXIM) was established in 1991 as an Export Credit Agency (ECA) with a share capital of ₦50 billion, held equally by the Federal Ministry of Finance and the Central Bank of Nigeria. The Bank which replaced the Nigerian Export Credit Guarantee & Insurance Corporation earlier set up in 1988, has the following main statutory functions: (1) provision of export credit guarantee and export credit insurance facilities to its clients; (2) provision of credit in local currency to its clients in support of exports; (3) establishment and management of funds connected with exports; (4) maintenance of a foreign exchange revolving fund for lending to exporters who need to import foreign inputs to facilitate export production; (5) provision of domestic credit insurance where such a facility is likely to assist exports; and (6) maintenance of a trade information system in support of export business.

The Bank presently provides short and medium term loans to Nigerian exporters. It also provides short-term guarantees for loans granted by Nigerian Banks to exporters as well as credit insurance against political and commercial risks in the event of non-payment by foreign buyers (see NEXIM website)²⁶.

Apart from credit granting institutions, the Nigerian government has also created institutions to facilitate the flow of funds to SMEs through capacity building and provision of enabling environment. Some of these agencies include the following:

Small and Medium Enterprises Development Agency of Nigeria (SMEDAN)

SMEDAN was established in 2003 to promote the development of micro, small and medium enterprises (MSME) sector of the Nigerian economy. The agency has the following core functions: (1) stimulating, monitoring and coordinating the development of the MSMEs sector; (2) initiating and articulating policy ideas for the growth and development of MSMEs; (3) promoting and facilitating development programmes, instruments and support services to accelerate the development and modernization of MSME operation; (4) serving as vanguard for rural industrialization, poverty reduction, job creation and enhance sustainable livelihoods; (5) linking SMEs to internal and external sources of finance, appropriate technology, and

²⁶ <http://www.neximbank.com.ng/about-nexim/> (accessed 16/08/2014)

technical skills as well as to large enterprises; (6) promoting information and providing access to industrial infrastructure such as layouts, incubators, and industrial parks; (7) intermediating between MSMEs and the Government; and (8) working in concert with other institutions in both public and private sectors to create a good enabling environment for businesses in general, and MSME activities in particular (see SMEDAN website)²⁷.

Nigeria Investment Promotion Commission (NIPC)

NIPC is a Federal Government Agency in Nigeria established to encourage, promote, and coordinate investments in Nigeria. The Agency provides services for the grant of business entry permits, licenses, authorizations and incentives in a one-stop-shop environment. The services are provided in a coordinated, streamlined, efficient and transparent manner to meet the needs of investors.

Entrepreneurship Development Centers (EDCs)

As part of capacity building support for entrepreneurs in the SME and microfinance sub-sectors, the CBN has established up to 6 EDCs. The aim is to build the entrepreneurial spirit of the country's youths to enable them contribute effectively to the sustainable development of the economy. The first three centers were established in April 2008, and located in Onitsha, Kano and Lagos. In the second half of 2012, the CBN approved the establishment of three more centers, which were located in Makurdi, Maiduguri, and Calabar. In addition to existing six satellite EDCs located in 6 states, three new satellite centers were approved. Since the inception of the programme, a total of 41,441 individuals have been trained, 106,933 counseled, while 10,895 jobs had been created. In the same period, 1,034 trainees were able to obtain loans valued at ₦220.04 million from banks (CBN, 2012).

(II) Government Financing Programmes

Government financing programmes are either direct or indirect. Direct financing programmes involve direct dispensation of cash, equipment, and other forms of capital to various SME promoters. Indirect financing programmes, on the other hand, involve offering some form of

²⁷ <http://www.smedan.org/functions.html> (accessed 16/08/2014)

guarantee to a third party to provide finance to SME promoters in a particular sector or sub-sector of the economy. Examples of government financing programmes introduced by the Nigerian Government include:

Small and Medium Enterprises Equity Investment Scheme (SMEEIS)

The Small and Medium Enterprises Equity Investment scheme (SMEEIS) is a voluntary initiative of the Bankers' Committee approved at its 246th Meeting held on 21st December 1999. The initiative was in response to the Federal Government's concerns and policy measures for the promotion of Small and Medium Enterprises (SMEs) as vehicles for rapid industrialization, sustainable economic development, poverty alleviation and employment generation. The Scheme requires all banks in Nigeria to set aside 10% of their Profit After Tax (PAT) for equity investment and promotion of SMEs²⁸. The scheme is essentially a pool for venture capital. The funding provided under the scheme shall be in the form of loans or equity investment or a combination of both in eligible enterprises. The interest on loans shall be a single digit figure, subject to a maximum of 9%. Banks shall remain equity partners in the business enterprises for a minimum of 3 years, after which they may exit. During this period, banks are expected to provide financial, advisory, technical and managerial support from the banking industry. Every legal business activity is covered under the Scheme with the exception of trading/merchandising and financial services. Under the scheme, existing debts owed to participating banks may be converted to equity (see CBN website²⁹). As at end of 2009, the scheme had attracted a total amount of ₦42.3 billion, out of which ₦28.87 billion had been invested as equity investment in 336 projects (Gbandi and Amissah, 2014).

Agricultural Credit Guarantee Scheme Fund (ACGSF)

The ACGSF was set up in 1977 by the CBN and commenced operations in 1978. The fund guarantees credit facilities extended to farmers by commercial banks up to 75% of the amount in default net of any security realized. The fund is managed by the CBN. Since inception in

²⁸ Under the terms of the guidelines (amended by CBN circular to all banks dated 11/07/2006), the contributions will be 10% of profit after tax (PAT) and shall continue until the first five years, but banks' contributions shall thereafter reduce to 5% of PAT. However, this is no longer mandatory. The SMEEIS reserves are non-distributable.

²⁹ <http://www.cenbank.org/devfin/smeeispage.asp> (accessed 16/08/2014)

1978, the CBN has guaranteed a total of 803,264 loans under the scheme, amounting to ₦62.05 billion as at December 2012. The cumulative number and value of claims paid from its inception to date stood at 14,582 claims, valued at ₦450.86 million. Under the interest drawback programme (IDP) of the ACGSF, a cumulative total of 181,078 claims, valued at ₦2.78 billion have been made under the scheme as at December 2012 (CBN, 2012:21).

Agricultural Credit Support Scheme (ACSS)

The ACSS was established to finance large ticket agricultural projects. The scheme, which is an initiative of the Federal Government and the CBN with active participation of the bankers' committee, has a prescribed fund of ₦50 billion (~£200 million). ACSS was introduced to enable farmers exploit the untapped potentials of Nigeria's agricultural sector, reduce inflation, lower the cost of agricultural production, generate surplus for export, increase Nigeria's foreign earnings as well as diversify its revenue base. Under ACSS, funds are disbursed to farmers and agro-allied entrepreneurs at a single-digit interest rate of 8.0%. At the commencement of the project support, banks will grant loans to qualified applicants at 14.0% interest rate. Applicants who pay back their facilities on schedule enjoy a rebate of 6.0%, thus reducing the effective rate of interest to be paid by farmers to 8.0% (see CBN website³⁰). Since inception, the total rebate paid stood at ₦876.89 million to 46 projects (CBN, 2012).

Commercial Agricultural Credit Scheme (CACS)

The CACS was established in 2009 by the CBN in collaboration with the Federal Ministry of Agriculture and Water Resources. The aim of the scheme is to provide finance for the country's agricultural value chain (production, processing, storage and marketing). The scheme is financed through a ₦200 billion bond, raised by the Debt Management Office (DMO). Loans under this scheme are disbursed at a maximum rate of 9%. According to Sanusi (2013), as of June 2013, the full amount of the CACS Fund has been disbursed to 292 projects along the agriculture value chain. Out of the total number of projects financed, 48% and 41% were for production and processing activities respectively. Average capacity utilization of projects financed by CACS increases from 45% in 2009 to about 75% as at June 2013. Sanusi (2013) noted that the CBN's agricultural lending interventions have yielded

³⁰ <http://www.cenbank.org/devfin/acgsf.asp> (accessed 16/08/2014)

positive results, as evidenced by the percentage of bank lending to agriculture, as a proportion of total lending, which has increased from 1.4% in 2009 to 4% as at June 2013.

The SME Credit Guarantee Scheme (SMECGS)

The ₦200 billion SMECGS was established in April 2010 to fast-track the development of the manufacturing sector and SMEs by providing up to 80% guarantee for commercial bank loans to SMEs (CBN, 2012; Gbandi and Amissah, 2014). As at December 2012, the total number of applications guaranteed under the scheme since inception was forty-six (46), valued at ₦2.054 billion.

CBN Intervention Fund

The ₦235 billion (~£940 million) CBN intervention fund represents an intervention credit granted to the commercial banks for the purpose of refinancing/restructuring loans to SMEs in the manufacturing sector. The objectives of the fund are to improve the financial position of the deposit money banks and facilitate more credits to manufacturers. The fund is managed and administered by the bank of industry (BOI). The types of facilities granted under this scheme include long-term loans for acquisition of plant and machinery, refinancing of existing loans, resuscitation of ailing industries, refinancing of existing lease, and working capital (CBN, 2010). The maximum loan amount obtainable by eligible manufacturers is ₦1 billion (~£4 million) for a single obligor in respect of refinancing/restructuring. The total facility is secured by Nigerian Government Securities. The fund shall be administered at a maximum (all-inclusive) interest rate of 7% payable on a quarterly basis. Specifically, the managing agent (BOI) shall be entitled to a 1% management fee and the banks, a 6% spread. The maximum tenor for term loans under the programme is 15 years, while the tenor for working capital is 1 year, renewable annually subject to a maximum tenor of 5 years (Zenith Bank Plc, 2013).

Over 23 commercial banks and 1 development financial institution (DFI) have participated in the scheme since inception. As at March 2013, over ₦229.18 billion have been disbursed to more than 525 beneficiary companies of the scheme. A cumulative turnover of the obligors increased from ₦2.97 billion per annum before intervention to ₦5.5 billion after intervention. The scheme generated direct employment in beneficiary institutions, which increased from 86,513 before intervention to 130,143 after intervention, representing an increase of 50.4%.

The scheme also generated indirect employment of 802,210. According to the BOI, the scheme has enhanced the liquidity of the participating banks considerably (see BOI website)³¹.

3.3.3. Microfinance for MSMEs

Despite numerous financing programs designed by the Nigerian government over the years, which were aimed at directing credit to the MSME sector, there exists a huge untapped market for financial intermediation at the micro and rural levels of the Nigerian economy. Microfinance services, particularly those sponsored by government, have adopted the traditional supply-led, subsidized credit approach mainly directed to the agricultural sector and non-farm activities such as trading, tailoring, weaving, blacksmithing, agro-processing and transportation. Although the services have resulted in an increased level of credit disbursement and gains in agricultural production and other activities, the effects were short-lived, due to the unsustainable nature of the programs and poor capitalization.

In 2005, the Central Bank of Nigeria (CBN) moved to strengthen Nigeria's microfinance subsector by establishing microfinance banks (MFBs) to assist in expanding financial services to meet the financial needs of Micro, Small and Medium Enterprises (MSMEs). Microfinance is about providing financial services to micro-enterprises who are traditionally not served by the conventional financial institutions. According to the CBN (2005), three features distinguish microfinance from other formal financial products. These are: (1) the smallness of loans advanced and/or savings collected, (ii) the absence of asset-based collateral, and (iii) the simplicity of operations. The specific objectives of the CBN's microfinance policy are the following:

- (i) Make financial services accessible to a large segment of the potentially productive Nigerian population which otherwise would have little or no access to financial services;
- (ii) Promote synergy and mainstreaming of the informal sub-sector into the national financial system;

³¹ <http://boininigeria.com/cbn-intervention-fund/> (accessed 17/08/2014)

- (iii) Enhance service delivery and mobilize savings for intermediation by microfinance institutions to MSME entrepreneurs;
- (iv) Contribute to rural transformation; and
- (v) Promote linkage programs between universal/development banks, specialized institutions and microfinance banks to enable the latter source for wholesale funds and refinancing facilities for onward lending to their clients.

This microfinance policy was revised in 2011 with the specification of licensing requirements for three categories of MFBs (CBN, 2011b):

Category 1: Unit Microfinance Bank

A Unit Microfinance Bank is authorized to operate in one location. It shall be required to have a minimum paid-up capital of ₦20 million (~£80,000) and is prohibited from having branches and/or cash centers.

Category 2: State Microfinance Bank

A State Microfinance Bank is authorized to operate in one State or the Federal Capital Territory (FCT). It shall be required to have a minimum paid-up capital of ₦100 million (~£400,000) and is allowed to open branches within the same State or the FCT, subject to prior written approval of the CBN for each new branch or cash center.

Category 3: National Microfinance Bank

A National Microfinance Bank is authorized to operate in more than one State including the FCT. It shall be required to have a minimum paid-up capital of ₦2 billion (~£8 million), and is allowed to open branches in all States of the Federation and the FCT, subject to prior written approval of the CBN for each new branch or cash center.

The Central Bank of Nigeria regulates and supervises the activities of microfinance banks, while the Nigeria Deposit Insurance Corporation (NDIC) insures the deposits of MFBs.

MSME Development Fund (MSMEDF)

A ₦220 billion (~£880 million) MSME fund was recently launched by the CBN in 2013 and is designed to further enhance access to finance by MSMEs with the following objectives: (i) provide wholesale financing windows for participating financial institutions (PFIs); (ii) improve the capacity of the PFIs to meet credit needs of MSMEs; (iii) provide funds at reduced cost to PFIs; (iv) enhance access of women entrepreneurs to finance by allocating 60% of the Fund to them and (v) improve access to NGOs/MFIs to finance (Sanusi, 2013; CBN, 2014). The seed fund's policy stipulates 80:20 prescription for on-lending to micro enterprises and SMEs respectively (CBN, 2013).

3.4. Features of SME Lending Facilities in Selected Nigerian Banks

This section examines the features of SME lending facilities currently being offered to SMEs in selected Nigerian banks. The idea is to appreciate the various types of financing that are available to SMEs in Nigeria today and the cost and terms of such credit facilities. The content was drawn from the respective banks' websites.

Diamond Bank Plc³²:

Diamond bank offers access to short and medium term financing for working capital and asset purchase needs with reduced collateral requirements. These loan products are as follows:

- *Revolving Credit*: is a line of credit or term loan for short-term financing (with a maximum tenor of 1 year).
- *Instalment Loan*: is a term loan for fixed assets financing available for up to 3 years.
- *Mediloan*: is a Partnership between Diamond bank and USAID (United States Agency for International Development) that has developed a credit Scheme focused on businesses operating specifically in the health care sector.
- *Local Purchase Order (LPO) finance*: is a short-term finance facility to MSME customers to carry out supply requests. The supply order must come from only pre-approved institutions by Diamond Bank Plc.

³² <http://diamondbank.com/index.php/sme-banking> (Accessed 19/08/2014)

- *Contract Finance*: is a short-term finance facility for the execution of contracts from Diamond Bank's approved list of companies. Finance is available for a variety of legitimate contracts awarded by government agencies and reputable private organisations in the country operating in the different sectors and contracts with varying levels of complexity.
- *Import Finance*: offers credit facilities to MSME customers who require finance for importing either raw materials or finished goods for sale. It also offers short-term credit facilities to these importers for the purpose of duty payment.

*Access Bank Plc*³³:

Access Bank currently offers the following types of credit facilities for SMEs:

- *Trade Finance*: Is targeted at importers and exporters and designed to assist the customer in managing the trade cycle efficiently while making available the working capital to finance the different stages.
- *Syndications*: Syndicated credit facilities can also be arranged if the loan amount and risk involved are large. Access bank will invite other banks on the customer's behalf and draw up agreeable terms³⁴.
- *Distributor Credit Plans*: This is a loan Access Bank offers to the distributors of their own large corporate customers as well as other distributors to encourage the development of SMEs in the country through the provision of competitively priced loans.
- *Term Loans*: This is aimed specifically at transactions that involve capital projects or a customer's expansion programme.
- *Leases*: Access Bank's Lease Finance is fundamentally a business arrangement where the owner of an asset (lessor) allows another person (lessee) to have possession and use the asset for a consideration (rental). The rentals are fixed payments made on stipulated dates. The lease facility enables businesses obtain specific type of assets (such as plant and

³³ <https://www.accessbankplc.com/business-loans> (Accessed 19/08/2014)

³⁴ It is however unusual to learn that banks could arrange syndicated credit facilities, which is known to be the kind of facilities offered to blue chip companies and multinationals.

machinery, vehicles and computers, etc), while enjoying significant cash flow advantages derivable from the structure of the lease transaction, which is usually customer-tailored.

- *Invoice Discounting:* Access Bank's Invoice Discounting gives the customer the benefit of enjoying immediate cash flows from account receivables while still retaining sales accounting and credit control functions. This involves a continuous arrangement between the bank and the seller of goods or services on credit, whereby the bank purchases account receivables for immediate cash. Invoice Discounting is undertaken either on a confidential basis or on disclosed basis. Under the confidential basis, no notice of the bank's interest in the debt is given to the debtor. Under the disclosed basis, a notification is given to the debtor of the assignment of the debts to the bank.
- *Revolving Credit Facilities:* This is usually structured as short-term facility where the customer repays each drawing by a fixed period of time, usually from 30 to 180 days. The customer may re-borrow sums as needed up to the limit of the facility. This facility is usually for companies in stable industries with strong financial planning systems and is usually used for financing a company's permanent working capital. The facility tenor usually may not exceed 3 years.

Union Bank of Nigeria Plc³⁵:

Union bank offers the following financing options to its SME customers:

- *Short and medium project loans with adequate moratorium:* for the development of land & factory buildings, acquisition of plant & machineries or any other fixed assets
- *Overdraft facility for working capital purpose:* this type of facility is offered for purchase of raw materials, for overhead cost, for stock acquisitions or for bridging debtors payment period
- *Import Trade Finance Facility:* establishment of letters of Credits (LCs) for importation of raw material
- *Stocking term facility:* for Bulk stocking of goods and raw material.

³⁵ <http://www.unionbankng.com/index.php/personal-banking/loans-and-overdrafts/sme-loans> (Accessed 19/08/2014)

- *Warehousing facility*: for the purchase of goods stored in warehouses with joint control with a gradual piece meal release upon payment.
- *Guarantee and Indemnity*: bank guarantee and indemnity on behalf of the bank's customers and reputable institutions or organisations.
- *Equipment and Leasing Facility*: for acquisition of fixed assets for production purpose

Introduction of Psychometric Tests by First Bank of Nigeria Plc:

First Bank offers its SME customers most of the facilities mentioned above, but has now introduced a different approach to evaluating SME loan applications. As part of the bank's evaluation process, it uses *psychometric tests*. According to a statement by the bank's Head of SME banking, Mr Oluwafemi Akinfolarin:

“Getting loans without collateral is part of our contribution towards boosting the growth of the SME segment. Most SMEs don't have collateral to secure loans. With this now, all a prospective borrower is asked to do is to go through a psychometric test. Once the SME passes it, we advance the loan. That is a cutting edge innovation” (Abioye, 2014).

As noted in chapter 2, psychometric tests are a computer-based questionnaire tool that assesses a borrower's personality traits and other traits known to differentiate between successful and unsuccessful entrepreneurs. In the case of First Bank of Nigeria, SMEs are asked to provide a detailed business plan and repayment plan and then appraisal is done on the merits of the outcome of the psychometric test.

3.5. Chapter Conclusions

The Nigerian banking sector has faced a number of significant changes since 2004, namely the consolidation of banks and the emergence of relatively large, well-capitalized banks that are leading on the African continent and among the world's top 1000 banks. The post-consolidated banking sector is however marked by significant funding gaps for SMEs. Notwithstanding all the efforts of the Federal Government of Nigeria and other stakeholders in

the banking industry to make it easier for SMEs to access bank loans, majority of SMEs are either excluded or still appeared to find it difficult to meet the requirements for obtaining bank loans. An assessment of these various government-financing programs reveals that they have only been able to provide marginal funds to a small segment of SME borrowers. For example, the SMEEIS program has only attracted an investment of ₦42 billion (~£168 million) from commercial banks since 1999, out of which less than ₦30 billion (~£120 million) has been invested in only 336 projects. Similarly, the ACGSF has only been able to offer loans worth ₦62 billion (~£248 million) since 1978. The ₦235 billion CBN intervention fund was massively subscribed by the commercial banks, because it seemingly had minimal cost of funds (only 1% management fee paid to the BOI, while the banks earned a spread of 6%). Other schemes cumulatively have granted less than ₦10 billion (~£40 million) to MSMEs in Nigeria.

Consequently, majority of the over 17.6 million MSMEs still lack access to finance, despite the fact that there are at least 24 large commercial banks now sitting on more than ₦22.5 trillion naira (over £90 billion) in total assets as at June 2013. According to Sanusi (2013), about 80% of MSMEs are excluded from the financial markets. As analyzed earlier, if we assume only 6.5% of total commercial banks' loans to the economy should be granted to SMEs each year, a funding of gap of ₦3.6 trillion (or £14.4 billion) still exists in the post-consolidated banking sector in Nigeria (i.e. 2006-2012). A small fraction of the MSME financing gap left by conventional banks has been filled by microfinance banks (MFBs) operating in Nigeria whose cumulative lending portfolio amounted to ₦53 billion as at December 2010 (Ketley, 2012). The shortfall in credit allocation to SMEs may not be unconnected to the poor information infrastructure available in the country, which makes lending to informationally opaque SMEs a risky venture. An observation of the features of commercial banks' lending facilities reveals that Nigerian banks seem to be risk averse to new business customers, only offering facilities to either customers who have deposit or loan relationships with them or trading partners of their large corporate customers. SMEs are often advised to open corporate accounts in banks that offer the kind of facilities that relate to their kind of business. Nigerian banks also seem to have a preference for short-term lending, offering facilities for an average tenor of 12 months, with term loans not exceeding 3 years in most banks.

CHAPTER 4

RESEARCH METHODOLOGY

The methodology utilised by this study in investigating the microstructure of bank financing for SMEs in Nigeria is **quantitative analysis of survey data**. According to Saunders et al. (2007), quantitative analysis refers to techniques that can be used to process or analyse numerical or quantitative data. Quantitative data in its raw form (that is, before these data have been processed and analyzed) convey very little meaning to most people. These data therefore need to be processed to make them useful or informative. Quantitative analysis techniques such as graphs, charts and statistics allow us to do this; helping us to explore, present, describe and examine relationships and trends within our data. Quantitative data can range from simple counts such as the frequency of occurrences to more complex data such as test scores, prices, loan amounts or interest rates. To be useful these data need to be analyzed and interpreted. Quantitative analysis techniques assist the researcher in this process. They range from creating simple tables or diagrams that show the frequency of occurrence and using statistics such as indices to enable comparisons, through establishing statistical relationships between variables to complex econometric modeling. The main computing softwares used by this study for the data analysis are IBM SPSS and STATA.

The rest of this chapter is structured as follows: Section 4.1 describes the data collection method, sampling procedures and questioning techniques. Section 4.2 examines the methods of data analysis, including the sample data descriptives, nonparametric statistics and econometric method used. The limitations of the study are stated in section 4.3.

4.1. Data Collection

There are different possible data collection methods such as examining secondary sources, observation, questionnaire survey and semi-structured or unstructured interviews (Saunders et al., 2007). After evaluating all possible data collection methods, the researcher found that the most appropriate method that will provide practical answers to the research questions and stated objectives of the study was the use of a *questionnaire survey*.

4.1.1. The Survey Instrument

Rationale for Using Survey Instrument

This study uses the **questionnaire survey instrument** as the primary data collection method. The use of a survey instrument is most ideal for this type of project because it allows for responses to be gathered in an articulate and standardised way and since the questions are interpreted the same way by all respondents (Robson, 2011). Other methods such as observation and in-depth interviews might be well suited for exploratory studies such as discovering customers' attitudes. Unlike other methods, questionnaires can be used for descriptive or explanatory research, where for example, the aim is to describe the variability in different phenomena or explain the relationship between variables, in particular, cause-effect relationships (Saunders et al., 2007). The survey strategy allows the researcher to collect quantitative data, which can be analysed quantitatively using descriptive and inferential statistics. In addition, the data collected using a survey strategy can be used to determine particular relationships between variables and to produce models of these relationships. Questionnaires also tend to be more objective than other collection methods such as interviews because of their standardised structure (Robson, 2011). Generally, it is relatively quick to collect information using a questionnaire. If worded correctly, questionnaires normally require less skill and sensitivity to administer than semi-structured or in-depth interviews (Jankowicz, 2005). Potentially, information can be collected from a large portion of a group. Using a survey instrument should give the researcher more control over the research process and, when sampling is used, it is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for the whole population.

Notwithstanding the disadvantages of using this method (for example, time taken to design it, limit to number of questions that can be asked, low response rate, and time taken to analyse it), questionnaire survey is still the most appropriate method for this type of research. The use of questionnaire is supported by numerous other similar studies that use survey data, including notable journal articles, World Bank research papers and working papers by African Development Bank on SME financing in Sub-Saharan African countries (e.g. Owualah, 1988; Fletcher, 1995; Lehmann and Neuberger, 2001; Cole et al., 2004; Bruns and Fletcher, 2008; Ayyagari et al., 2008; Beck et al., 2008b; St-Pierre and Bahri, 2011; Calice, Chando and Sekioua, 2012; Berg and Fuchs, 2013; Tronnberg and Hemlin, 2014 to mention a few). Apart

from questionnaires, data was also collected from secondary sources such as banks' annual reports, loan policy statements as well as previous survey research/published works on SME financing. The use of secondary data helps to provide additional evidence to support and validate the findings.

Designing the Survey Instrument

Saunders et al. (2007) explain the importance of having a research design, which will detail the general plan of how the researcher intends to go about answering his research questions. A research design will contain clear objectives, derived from the research questions and will specify the sources of data collection and the constraints that will inevitably affect the data collection process (e.g. access to data, time, location and money) as well as ethical issues.

In connection with these, the objectives of the survey instrument in the current study were clearly specified at the beginning of the questionnaire. The survey stated that the survey will be administered on relationship managers and senior loan officers of selected Nigerian banks and will seek to investigate the characteristics of borrowers and lenders as well as business environmental factors, which influence the availability of credit to SMEs; the determinants of loan contract terms, lending preferences and approaches by Nigerian banks and lastly, the economic value or benefits of lending relationships to Nigerian banks. The survey instrument also stated the significance and benefits of the study for participating banks, policy makers and bank dependent borrowers.

As part of the criteria for carrying out fieldwork, the survey instrument included a *consent form* and some guidance notes to respondents of the survey in the form of a *plain language statement* containing the purpose of the study, the reason why participants have been chosen, the structure of questions asked and estimated time for completing the questionnaire. The guidance notes also included the planned use and dissemination of the data collected and assurance of confidentiality and anonymity for each participant and the bank. In terms of ethical risks, there were no significant ethical risks involved in the research project, except for the fact that the researcher undertook to guarantee the confidentiality of the participants to the survey. Records held for each participant or bank was done in accordance with the University of Glasgow research ethics code, which are reflective of generally accepted data protection principles. Prior to the commencement of the research, the research supervisor wrote a letter of

introduction for the researcher to the respective bank managers, which was accompanied by the ethics approval letter from the College of Social Sciences Ethics Committee.

In preparing for fieldwork, Arthur and Nazroo (2003) emphasized the importance of a pilot test as a critical part of the research. According to them, when assessing the scope of the study, it is important to review whether it allows participants to give a full and coherent account of the central issues of the study and incorporate issues they think are important. In other words, a survey instrument should not constrain what participants want to say in relation to the research questions. If a research instrument is not working, because it is not generating the clarity, scope or depth of data sought, then it needs some revision. Yin (2009:92) also notes that a pilot test helps the researcher to refine his data collection plans with respect to both the content of the data and the procedures to be followed. In the current study, a pilot test was carried out on 5 loan officers from three Nigerian banks (two tier I bank and 1 tier II bank) prior to the final development of the survey questionnaire. However, the pilot test was only conducted in the banks where the researcher had key contacts (research informants) as opposed to using more standardised criteria for selecting the pilot cases. Moreover, the banks were more geographically convenient and accessible.

It should be noted that after the pilot process, a number of relevant lines of questions were further developed and/or modified which also helped to provide some conceptual clarification of the research design. A few questions were removed while some other questions were added after incorporating the comments of the informants. Due to the developing nature of the credit system in Nigeria, questions that initially examined the use of credit scoring techniques in the underwriting process were replaced with questions on relationship lending approaches, while questions on borrower characteristics, lender characteristics and lending preferences were modified to reflect the lending practices, bank organizational factors and business environment factors peculiar to lending activity in Nigeria and sub-Saharan African countries in general. It should also be noted that the data collected was done on the basis of the perceptions of the respondents (i.e. the loan officers) and is mainly ordinal in nature.

4.1.2. Sampling Technique

The sampling technique adopted for this study is **purposeful sampling** (also known as **judgmental sampling**). Purposeful sampling is a non-probability sampling procedure in which the judgment of the researcher is used to select cases that make up the sample to enable him answer his research questions and meet his research objectives (Saunders et al., 2007). According to Marshall (1996), the researcher actively selects the most productive sample to answer the research question. This can involve developing a framework of the variables that might influence an individual's contribution and will be based on the researcher's practical knowledge of the research area, the available literature and evidence from the study itself. Purposeful sampling is often used when working with very small samples such as in case study research and when the researcher wishes to select cases that are particularly informative (Neuman, 2000). Researchers adopting the grounded theory strategy may also use purposive sampling. For such research, findings from data collected from the researcher's initial sample inform the way he extends his sample into subsequent cases. Such samples cannot, however, be considered to be statistically representative of the entire population. Patton (2002) emphasizes this point by contrasting the need to select information-rich cases in purposeful sampling with the need to be statistically representative in probability sampling.

In connection with this need for sampling to be more representative, this study selected twelve of the largest Nigerian banks for the survey. These include: (1) Zenith Bank (2) First Bank (3) Guaranty Trust Bank (GTB) (4) Access Bank (5) United Bank for Africa (UBA) (6) Ecobank Nigeria Plc (7) Fidelity Bank (8) First City Monument Bank (FCMB) (9) Skye Bank (10) Diamond Bank (11) Stanbic IBTC, and (12) Union Bank of Nigeria. These 12 banks are headquartered in Lagos, the commercial capital of Nigeria. Together, these banks account for more than 77% of the market share of assets and deposits and they were among the only 13 Nigerian Banks listed in the Top 1,000 global banks in 2013 by the Banker Magazine. The reason for excluding 1 of the 13 largest banks is that it is a foreign bank (Standard Chartered Bank), while the others are domestic banks, and including just 1 foreign bank together with 12 domestic banks will misrepresent the overall findings from the survey. Moreover domestic banks dominate the Nigerian banking system. By estimation, these 12 domestic banks provide more than three-quarters of the total loans to SMEs in Nigeria.

Table 4.1 shows that a total of 249 questionnaires were distributed to relationship managers and loan officers spread geographically across 41 branches of the 12 banks in the Lagos Financial Centre, out of which 121 were returned, implying a moderately high response rate of 48.6%. For most academic studies involving top management or organisation's representatives, a response rate of approximately 35% is reasonable (Baruch, 1999). Saunders et al. (2007: 358) also report that a response rate of 30-50% for questionnaires delivered and collected is in fact normal.

Table 4.1. Questionnaire Distributions and Collection By Bank

S/N	Name of Bank	Total No Distributed	Total No Returned	No of Participating Bank Branches
1	Zenith Bank Plc	34	11	3
2	First Bank of Nigeria Plc	11	9	4
3	Guaranty Trust Bank Plc	15	9	4
4	Access Bank Plc	13	9	4
5	United Bank for Africa Plc	30	9	3
6	Ecobank Nigeria Plc	20	11	3
7	Fidelity Bank Plc	20	10	3
8	First City Monument Bank Plc	23	12	3
9	Skye Bank Plc	15	11	3
10	Diamond Bank Plc	30	11	3
11	Stanbic IBTC Plc	15	10	4
12	Union Bank of Nigeria Plc	23	9	4
	Total	249	121	41
	Response Rate:	48.60%		

Source: Fieldwork on Survey of Loan Officers in Nigeria

Purposeful Sampling Strategies

Patton (2002) identifies several purposeful sampling strategies, ranging from the selection of *extreme or deviant (outlier) cases* for the purpose of learning from unusual manifestations of the phenomena of interest, to the selection of cases with *maximum variation* for the purpose of documenting unique or diverse variations that have emerged in adapting to different conditions, and to identify important common patterns that cut across variations (*purposeful stratified sampling*); and the selection of homogeneous cases for the purpose of reducing

variation, simplifying analysis, and facilitating group interviewing (*homogeneity sampling*). Other types of sampling designs include criterion sampling, typical case sampling, snowball sampling, intensity sampling, critical case sampling, theory-based sampling, confirming or disconfirming case, purposeful random sampling, opportunistic or emergent sampling and convenience sampling.

This study utilises two of these purposeful sampling strategies – *criterion sampling* and *purposeful stratified sampling*. **Criterion sampling** involves reviewing and studying “all cases that meet some predetermined criterion of importance” (Patton, 2002:238). This approach is frequently employed by research synthesists to construct a comprehensive understanding of all the studies that meet certain predetermined criteria. Most research synthesists employ criterion sampling by stating explicit inclusion/exclusion criteria, which includes specifications for methodological rigour (Suri, 2011). It is crucial to reflect critically and realistically on the criteria being used, especially the criteria for methodological rigour. In line with this idea and in order to achieve the specific objectives of this research, a number of criteria were used to select the type of respondents that would participate in the survey. The criteria used for this study were based on the functions of lending administration – loan appraisal/underwriting, loan disbursement, loan monitoring/ongoing risk management, loan collection and loan review. The participants selected for the survey thus included loan officers, relationship managers and business managers who are either directly or indirectly involved in appraising SME loan applications and/or involved in disbursing, monitoring, collecting or reviewing loans made by banks to SMEs resident in Nigeria.

Another variant of purposeful sampling that was used in this study is **stratified purposeful sampling**, which allows the researcher to select his case samples according to sub-groups to be studied in greater detail. This type of sampling illustrates characteristics of particular sub-groups of interest and facilitates comparisons between the different groups. The study thus took samples across branch types serving SMEs (i.e. retail branches versus commercial branches). Fifty-six respondents were loan officers serving low-end SME customers in retail

branches, while sixty-five loan officers were domiciled in corporate/commercial branches³⁶. The study also took samples based on the level of relationship banking experience that respondents had. Ninety-two of the loan officers (or 76%) had relationship banking experience of over 5 years, while 29 (or 24%) had relationship banking experience of less than 5 years (see table 4.2).

Table 4.2 Demographic Characteristics of Loan Officers

Respondents' Relationship Banking Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 years R/B experience	29	24	24	24
	5 years or more R/B experience	92	76	76	100
	Total	121	100	100	
Respondents' Branch Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Retail Business Branches	56	46.3	46.3	46.3
	Commercial Business Branches	65	53.7	53.7	100
	Total	121	100	100	

Source: Fieldwork on Survey of Loan Officers in Nigeria

Challenges of Using Purposeful Sampling

Despite its wide use, there are numerous challenges in identifying and applying the appropriate purposeful sampling strategy in any study. For instance, according to Palinkas et al. (2013), the range of variation in a sample from which purposeful sample is to be taken is often not really known at the outset of a study. To set as the goal the sampling of information-rich informants that cover the range of variation assumes one knows that range of variation. Consequently, an iterative approach of sampling and re-sampling to draw an appropriate sample is usually recommended to make certain the theoretical saturation occurs (Miles and Huberman, 1994). However, that saturation may be determined a priori on the basis of an existing theory or conceptual framework, or it may emerge from the data themselves, as in a

³⁶ In terms of geographic location, branches in Alimosho, Ojo and Amuwo Odofin Local government areas (LGAs) of the Lagos Financial Centre were designated as 'Retail Business Branches', while branches in Ikeja, Lagos Island and Airport Road, Oshodi/Isolo LGAs were designated as 'Commercial Business Branches'.

grounded theory approach (Glaser and Strauss, 1967). In addition, purposeful sampling requires access to key informants³⁷ in the field who can help in identifying information-rich cases. Research retrieved through this channel is likely to be biased towards the beliefs prevalent among these informants (Suri, 2011).

4.1.3. Questioning Techniques, Variables and Coding Framework

Using a 12-page questionnaire, a total of 30 broad questions were asked, which generated 166 variables in all (see annex A for the full questionnaire). The first batch of questions asked, which cut across sections A and B, investigates the characteristics of borrowers and lenders respectively that influence the bank's willingness to lend to SMEs. The inclusion of questions on borrower and lender characteristics helped to explain the perception of bankers on the demand-side and supply-side factors that drive or constrain their involvement with SMEs in Nigeria's post-consolidated and post-crisis period, thus providing suitable answers to proposition 1 of the study. The sort of questions asked in these sections have been included by previous survey studies (e.g. Owualah, 1988; Fletcher, 1995; Cole et al., 2004; Bruns and Fletcher, 2008, etc) and seek to investigate the microstructure of small business lending by banks in terms of the relative influence of financial and non-financial characteristics of borrowers (e.g. loan purpose, loan security, firm size, financial performance, sector of operation, credit rating, strength of previous and existing bank-borrower relationships, owners' business experience, professional training, personal guarantee, etc), as well as their compatibility with the incentives and environments facing banks in the loan approval processes. In addition, some recent studies (e.g. Ayyagari et al., 2008; Calice, et al., 2012; Berg and Fuchs, 2013) have found that SME lending in sub-Saharan Africa is also largely driven by macroeconomic factors, the degree of competition, the information environment, the legal and contractual environment and government regulatory requirements, which were also captured in the current study. Section B also included questions on changes in lending policies and risk appetite since the global financial crisis of 2008-09. The idea of including questions on the financial crisis is to see whether the risk preferences of banks have changed as a result of the crisis and the implications these may have on SME lending.

³⁷ Key informants have special expertise in the subject matter.

The second batch of questions (section C) examines the determinants of SME credit terms, which helped to provide answers to proposition 2 on the risk factors influencing loan contract determination, particularly the determinants of risk premium between large (prime) customers and small firms and the incidence of collateralization on SME loans. Some studies have shown that the financing costs or risk premium for lines of credit on small business loans are determined by a plethora of factors, such as borrowing firm's size, loan size, firm's age, firm's credit rating, availability of collateral or guarantees, nature of bank-borrower relationships, etc (Cowling, 1999a; St-Pierre and Bahri, 2011). These factors have been included in the survey to ascertain the loan pricing practices of Nigerian banks with respect to SME loans. Furthermore, some other studies have also empirically examined the determinants of collateral usage and the amount of collateral charged on SME loans using micro-level data. Jimenez et al. (2006) use data from the Credit Register of Banco de Espana (CIR), while Cowling (1999b) used data from a random sample of small businesses collected from an Association of British Chambers of Commerce survey. The current study includes most of the variables tested in these empirical studies in the survey such as loan size, firm size, type of customer (new or existing), riskiness of project being financed, firm's credit rating, owner's credit rating, competition and business cycle factors, etc. The idea is to ascertain the extent to which banks take these factors into consideration in setting collateral requirements for SME loans, since SMEs in Nigeria face perceived risks and uncertainties that make banks reluctant to provide long-term credit to them. In addition, another question asks for the types of collateral that are most frequently accepted by the banks from SME loan customers (e.g. real estate, vehicles and business equipment, goods in stock, household goods, cash and other liquid assets, bank and personal guarantees). This question has been previously asked by Beck et al. (2008b) in a survey of 91 banks in 45 countries. Their results showed some notable differences in the frequency of collateral practices between banks in developed and developing countries.

The third batch of questions was asked across two sections (sections D and E) with the aim of providing answers to proposition 3 of the study on the significance of information acquisition by loan officers and relationship lending techniques. Section D related to how lending is organised at the bank level in terms of the centralization and decentralization of lending administration functions and the role of loan officers in loan decision-making, while section E probed into the information acquisition practices of Nigerian banks and the economic value derivable from relationship lending. Specifically, the questions on the hierarchy of loan

decision making, loan officer discretion and loan officer incentives were motivated by studies that examine the loan officer's authority as a key determinant function of the acquisition of soft information (e.g. Benvenuti et al., 2010). The questions on the nature and quality of bank-borrower relationships, marked by the frequency of interactions between borrowers and loan officers were included to test the extent of the accumulation of soft information and the use of relationship lending techniques in loan decision-making (Cole, 1998; Boot, 2000). The questions on the economic benefits and costs of relationship lending were derived from studies that show the link between information accumulation and the value generated by banks from investing in lending relationships (Berger and Udell, 1995; Berlin and Mester, 1998; Peek, 2007; Bharath et al, 2007; Uchida et al., 2012).

The types of questions asked ranged from binary questions (i.e. Yes/No answers) to multiple-choice questions (tick only one answer), to multiple selection questions (i.e. tick all that apply) and to ranking questions (strongly disagree, disagree, agree, strongly agree). The questionnaire also included frequency-type questions (e.g. Never, Sometimes, Often, Always), as well as quantitative variables. The survey form also allowed for free-form comments for some questions to provide explanation and depth to the initial answer. All the responses, including those in the form of Likert scales were then loaded onto a statistical package (SPSS) and coded to generate the variables in variable view. In survey research, a Likert scale is an approach to response categories that measures the extent of a person's satisfaction or agreement with a set of statements or questions. This type of response category makes it easy to quantify survey responses, simplifying data analysis. A variety of options for analyzing Likert scale data exists, including the chi square statistic, which compares respondents' actual responses with expected answers.

The variables generated from the study included nominal and ordinal categorical variables, and continuous (scale) variables. Ordinal variables can either be string (alphanumeric) or numeric values that represent distinct categories (e.g. 1=strongly disagree, 2= disagree, 3= agree, 4= strongly agree). Values fall within discrete but ordered categories – i.e. the sequence of categories itself has meaning (Pryce, 2005). Nominal variables are data values that represent categories with no intrinsic order. The sequence of categories is arbitrary and so ordering has no meaning in and of itself (e.g. name of bank or type of branch). The complete coding framework for each of the variables can be found in annex B (at the end of the thesis).

4.2. Methods of Data Analysis

This section explains the main statistics and tests conducted as well as the methods used in estimating the relationships between key variables of interest. The quantitative methods used in the study include descriptive statistics, nonparametric statistics and ordinal regression analysis. The following three sub-sections will, respectively, address these methods.

4.2.1. Sample Data Descriptives

The use of simple descriptive statistics involves quantitatively describing the distribution of variables or the main features of the data collected during the survey. Some measures that are commonly used to describe a data set are *measures of central tendency* (the mean, median, and mode), *measures of variability* or *dispersion* (minimum and maximum values of the variables, range, standard deviation, variance, and interquartile range) and measures of the *shape of the distribution* (i.e. kurtosis and skewness). Characteristics of a variable's distribution may also be depicted in graphical or tabular format, including histograms, bar chart, pie chart, box plots and stem-and-leaf display. Descriptive statistics could also come in the form of cross tabulations and contingency tables, quantitative measures of dependence and descriptions of conditional distribution.

Descriptives for Firm and Owner Characteristics

From table 4.3 it can be observed that five variables (purpose of loan, loan security, profitability of business, firm's credit rating and owners' credit rating) have a median of 4, while other firm and owner characteristics have a median of 3 or 2. This implies that at least 50% of the respondents rank these variables as very important in the deciding whether or not to grant loans to SMEs, while 50% report other factors as either important or moderately important. The mean ranking of importance of firm and owner characteristics range from 2.11 (distance to SME customer), which shows the least important variable, to 3.83 (purpose of loan), which can be described as the most important borrower-specific variable in the lending decision. The 5% trimmed mean, which calculates the mean after removing 5% of the largest and smallest values still ranks the two variables as least important (2.06) and most important (3.92) respectively. Chapter 5 provides a detailed analysis on the measures of central tendency and the frequency of the distributions of firm and owner characteristics.

Table 4.3. Descriptives for Firm and Owner Characteristics

Descriptives	Statistic													
	Mean	S.E.M.	5% T.M.	Median	Var.	St. Dev.	Min.	Max.	Range	I.Q.R.	Skewness	S.E.S.	Kurtosis	S.E.K.
Purpose of Loan	3.83	0.050	3.92	4	0.295	0.543	1	4	3	0	-3.919	0.22	16.821	0.437
Loan Amount	3.30	0.074	3.38	3	0.661	0.813	1	4	3	1	-1.072	0.22	0.692	0.437
Loan Security	3.45	0.074	3.55	4	0.666	0.816	1	4	3	1	-1.649	0.22	2.386	0.437
Presentation of Business Plan	3.31	0.070	3.37	3	0.601	0.775	1	4	3	1	-0.831	0.22	-0.125	0.437
Profitability of Business	3.57	0.052	3.62	4	0.330	0.575	2	4	2	1	-0.949	0.22	-0.079	0.437
Firm's Size	2.79	0.070	2.82	3	0.599	0.774	1	4	3	1	-0.172	0.22	-0.372	0.437
Firm's Age	2.83	0.069	2.86	3	0.578	0.760	1	4	3	1	-0.391	0.22	0.026	0.437
Firm's Transparency	2.79	0.093	2.83	3	1.049	1.024	1	4	3	2	-0.236	0.22	-1.150	0.437
Firm's Leverage	3.31	0.071	3.38	3	0.617	0.786	1	4	3	1	-0.935	0.22	0.240	0.437
Firm's Organizational Form	2.78	0.083	2.81	3	0.825	0.908	1	4	3	1	-0.287	0.22	-0.701	0.437
Firm's Liquidity	3.09	0.071	3.13	3	0.617	0.785	1	4	3	1	-0.477	0.22	-0.376	0.437
Firm's Sector of Activity	3.21	0.071	3.27	3	0.615	0.784	1	4	3	1	-0.805	0.22	0.296	0.437
Firm's Credit Rating	3.44	0.074	3.53	4	0.665	0.815	1	4	3	1	-1.438	0.22	1.440	0.437
Stability of Demand for Firm's Products	3.34	0.052	3.38	3	0.326	0.571	2	4	2	1	-0.158	0.22	-0.672	0.437
Existence of Deposit Relationship	2.86	0.086	2.90	3	0.888	0.943	1	4	3	2	-0.382	0.22	-0.778	0.437
Firm's Deposit Account Balance	2.47	0.086	2.47	2	0.901	0.949	1	4	3	1	0.233	0.22	-0.868	0.437
Existence of Loan Relationship	2.69	0.085	2.72	3	0.864	0.930	1	4	3	1	-0.237	0.22	-0.773	0.437
Existence of Fin Mgt Service Relationship	2.34	0.083	2.32	2	0.843	0.918	1	4	3	1	0.126	0.22	-0.804	0.437
Length of Relationship with Bank	2.46	0.083	2.46	2	0.834	0.913	1	4	3	1	0.212	0.22	-0.752	0.437
Exclusivity of Relationship	2.33	0.099	2.31	2	1.190	1.091	1	4	3	2	0.170	0.22	-1.279	0.437
Distance to SME Customer	2.11	0.082	2.06	2	0.813	0.902	1	4	3	2	0.270	0.22	-0.876	0.437
Physical Observation of Business	2.94	0.069	2.94	3	0.572	0.756	1	4	3	2	-0.021	0.22	-0.948	0.437
Owners' Credit Rating	3.40	0.066	3.49	4	0.526	0.725	1	4	3	1	-1.326	0.22	2.060	0.437
Owners' Educational Attainment	2.23	0.080	2.20	2	0.779	0.883	1	4	3	1	0.118	0.22	-0.816	0.437
Owners' Business Experience	3.23	0.063	3.26	3	0.479	0.692	2	4	2	1	-0.343	0.22	-0.880	0.437
Owners' Personal Guarantee	3.25	0.070	3.28	3	0.588	0.767	1	4	3	1	-0.570	0.22	-0.705	0.437
Owners' Personal Wealth	2.52	0.074	2.52	3	0.668	0.818	1	4	3	1	-0.021	0.22	-0.478	0.437
Owners' Equity Stake	3.21	0.079	3.29	3	0.749	0.865	1	4	3	1	-0.965	0.22	0.311	0.437

Note:

S.E.M. = Standard Error of Mean

5% T.M. = 5% Trimmed Mean

I.Q.R. = Interquartile Range

S.E.S. = Standard Error of Skewness

S.E.K. = Standard Error of Kurtosis

In terms of variability or spread, the data shows that there is a limited degree of dispersion given that the sample variance and standard deviation are less than 1 for majority of the variables, except for two variables (firm's transparency and exclusivity of relationship). The range, which is the difference between the minimum and maximum value, is 3 for all the variables except for three variables (profitability of business, stability of demand for firm's products and owners' business experience), which recorded a range of 2. The interquartile range (IQR) refers to the spread of the middle 50% of the data. The data showed that most of the variables have an IQR of 1 with only 5 variables having an IQR of 2, indicating that there is a high degree of consensus among loan officers on the importance of these variables. However, only purpose of loan has an IQR of 0, implying that there is no disagreement among loan officers that the purpose of loan is the most important borrower factor to consider when appraising SME loans.

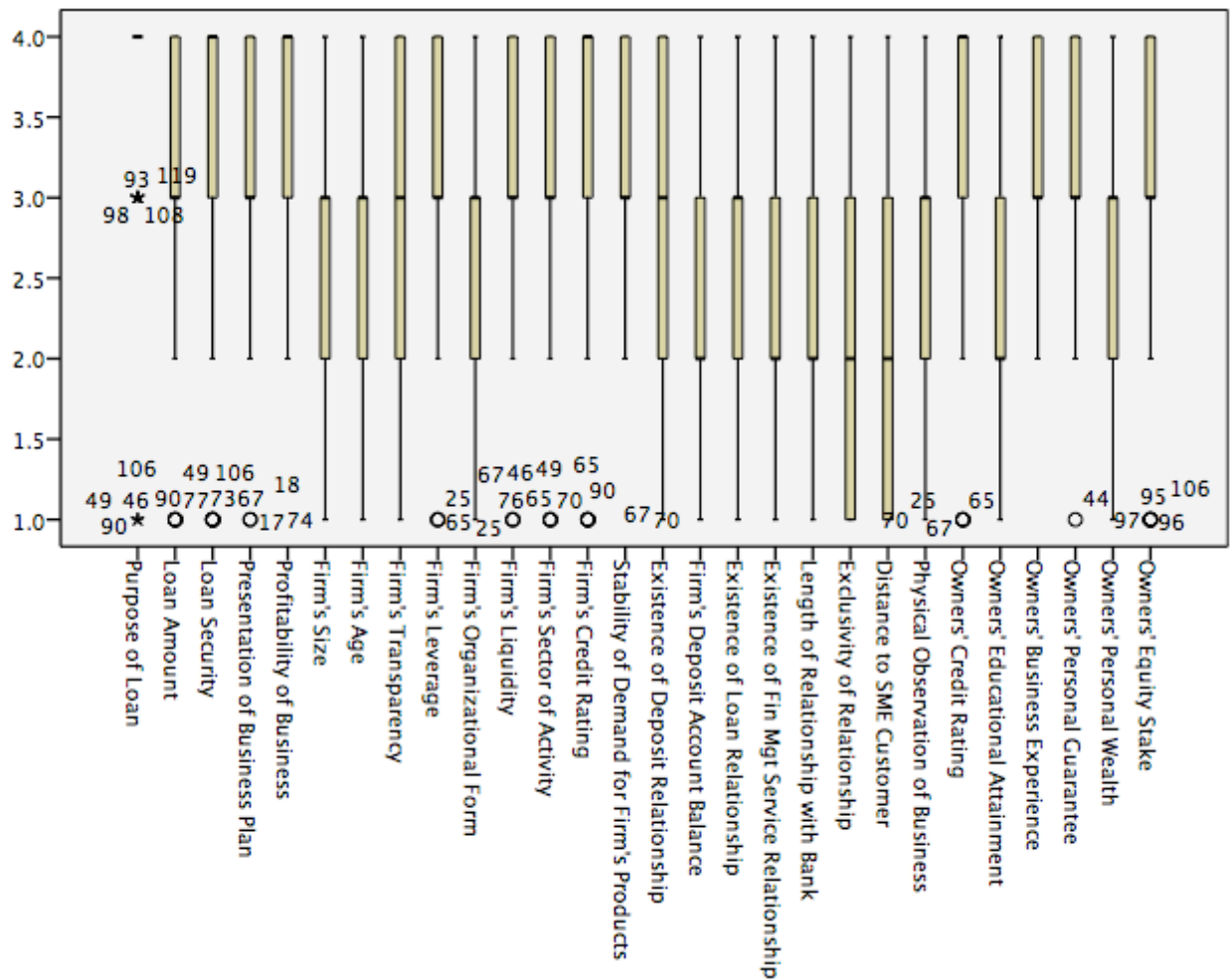
Figure 4.1: Box Plot for Firm and Owner Characteristics

Figure 4.1 shows the box plot for the distribution of responses relating to the importance of firm and owner characteristics. A box plot, sometimes called a box and whiskers plot is a type of graph used to display patterns of quantitative data. A boxplot splits the data set into *quartiles*. The body of the boxplot consists of a "box" (hence, the name), which goes from the first quartile (Q1) to the third quartile (Q3). Within the box, a vertical line is drawn at the Q2, the median of the data set. Two horizontal lines, called *whiskers*, extend from the front and back of the box. The front whisker goes from Q1 to the smallest non-outlier in the data set, and the back whisker goes from Q3 to the largest non-outlier. The box plot reveals information about the median and two measures of variability – the range and the interquartile range (IQR). The figure shows that the distribution of majority of the variables lie within the second and third quartiles, with the exception of some relationship variables, such as distance to SME customer and exclusivity of relationship.

Descriptives for Lender Characteristics and External Factors

From table 4.4, only two variables - *influence of regulatory requirements* and *bank lending policies towards SMEs* - have a median of 4, while other lender characteristics and external factors have a median of 3. This suggests that at least 50% of the respondents rank these variables as very important in deciding whether or not to grant loans to SMEs, while 50% report other factors as important. The mean ranking of the importance of lender characteristics also ranks these two factors, influence of regulatory requirements (3.64) and bank's lending policies towards SMEs (3.45) as the two most important variables respectively. These statistics invariably suggests that the respondents perceive that the risk appetite of Nigerian banks with respect to SME lending is principally driven by these two factors, while other factors are of secondary importance.

Table 4.4. Descriptives for Lender Characteristics and External Factors

Descriptives	Statistic													
	Mean	S.E.M.	5% T.M.	Median	Var.	St. Dev.	Min.	Max.	Range	I.Q.R.	Skewness	S.E.S.	Kurtosis	S.E.K.
Influence of Regulatory Requirements	3.64	0.062	3.73	4	0.46	0.681	1	4	3	1	-1.826	0.22	2.367	0.437
Bank's Lending Policies Towards SMEs	3.45	0.067	3.52	4	0.55	0.742	1	4	3	1	-1.212	0.22	0.808	0.437
Proportion of Bank's Asset Portfolio in SME Loans	2.98	0.075	3.03	3	0.68	0.826	1	4	3	2	-0.419	0.22	-0.447	0.437
Sectoral Distribution of Outstanding Loans to SMEs	2.90	0.070	2.94	3	0.59	0.768	1	4	3	1	-0.389	0.22	-0.069	0.437
History of Previous SME Loan Performance	3.36	0.065	3.42	3	0.51	0.717	1	4	3	1	-1.062	0.22	1.229	0.437
Risk Profile of the SME Sector	3.41	0.061	3.48	3	0.44	0.667	1	4	3	1	-1.048	0.22	1.376	0.437
Bank's Deposit Level and Financial Stability	3.32	0.069	3.39	3	0.57	0.755	1	4	3	1	-1.087	0.22	1.133	0.437
Level of Bank Deposits	3.25	0.073	3.30	3	0.64	0.799	1	4	3	1	-0.778	0.22	-0.113	0.437
Demand Facing Banks in the SME Loan Market	2.81	0.073	2.83	3	0.64	0.799	1	4	3	1	-0.141	0.22	-0.546	0.437
Competition from other Banks for SME Loans	2.66	0.071	2.68	3	0.61	0.781	1	4	3	1	-0.392	0.22	-0.120	0.437
Interest Rates or Returns from Competing Assets	2.93	0.078	2.97	3	0.74	0.858	1	4	3	2	-0.419	0.22	-0.477	0.437
Maturity Structure of Bank's Security Holdings	2.68	0.078	2.70	3	0.74	0.858	1	4	3	1	-0.287	0.22	-0.480	0.437
Specialization of Bank's Lending Officers	2.69	0.080	2.71	3	0.77	0.876	1	4	3	1	-0.322	0.22	-0.512	0.437
High Transaction Costs Associated with SME Loans	2.88	0.074	2.92	3	0.66	0.812	1	4	3	1	-0.338	0.22	-0.355	0.437
Adequacy of Information on Borrower Financial Condition	3.25	0.067	3.28	3	0.54	0.733	2	4	2	1	-0.427	0.22	-1.036	0.437
Enforcement Actions from Regulators	3.07	0.070	3.11	3	0.59	0.766	1	4	3	1	-0.467	0.22	-0.219	0.437
General Macroeconomic Conditions	2.98	0.069	2.99	3	0.57	0.758	1	4	3	2	-0.192	0.22	-0.640	0.437

Note:

S.E.M. = Standard Error of Mean

5% T.M. = 5% Trimmed Mean

I.Q.R. = Interquartile Range

S.E.S. = Standard Error of Skewness

S.E.K. = Standard Error of Kurtosis

All of the variables, except three show an interquartile range (IQR) of 1, implying that there is a high degree of consensus among the respondents on the importance of these variables. The shape of the distribution is measured by the coefficient of skewness and kurtosis. From table 4.4, the coefficient of skewness shows that the data are negatively skewed (i.e. not a symmetrical distribution). The tail of the distribution is to the left and mode is located to the right of the mean. The interpretation is that majority of the respondents rank the lender characteristics and external factors as more important than unimportant, hence the reason for the high median and modal values (see chapter 5 for a detailed analysis on the frequency of

the distribution). The combination of negative and positive coefficients of kurtosis also shows that some of the data are flat, while some are peaked relative to a normal distribution.

Figure 4.2: Box Plot for Lender Characteristics and External Factors

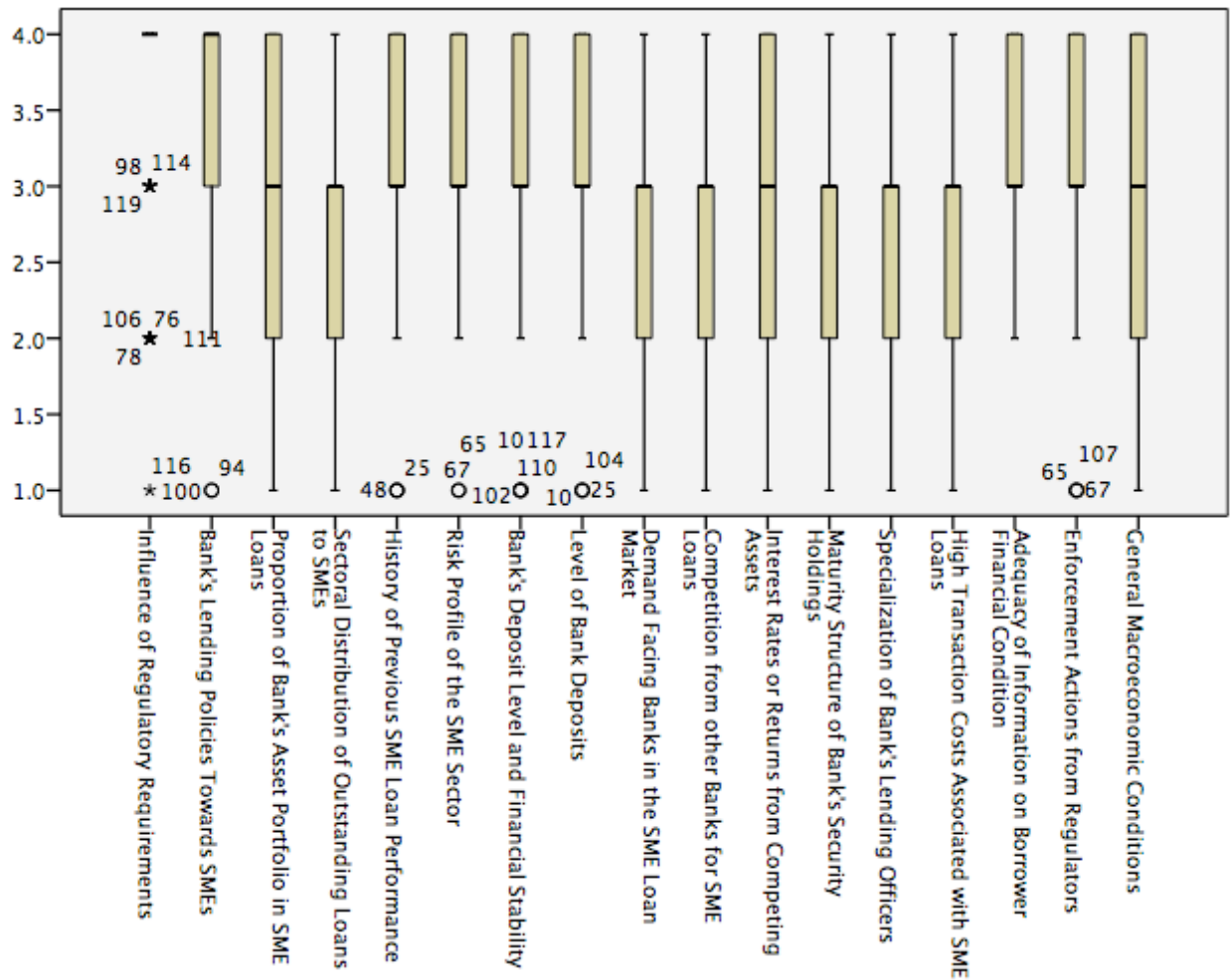


Figure 4.2 shows the box plot for the distribution of responses relating to the importance of lender characteristics and external factors. As in the case with firm and owner characteristics, the distribution of majority of the variables lie within the second and third quartiles, again confirming the high median values of the data and the relative consensus amongst respondents on the importance of these variables in the loan underwriting process.

Descriptives for Lending Practices and Preferences

From table 4.5, it can be observed that within the variables explaining bank practices in the area of loan contracts determination (i.e. the first 27 factors), about 13 of these factors have a median of either 3 or 4, while the others have a median of 1 or 2. Higher median values for factors such as use of collateral, full collateralisation, collateral differentials between large and small firms, preference for short term lending, etc, show the relative importance of these practices in Nigerian banks. Within the factors that explain the relationship lending practices of Nigerian banks (i.e. the last 12 factors), respondents also seem to suggest that some practices are dominant, including that banks maintain frequent and personalised contact with customers and that lending decisions are rule based.

Table 4.5: Descriptives for Lending Practices and Preferences

Descriptives	Statistic													
	Mean	S.E.M.	5% T.M.	Median	Var.	St. Dev.	Min.	Max.	Range	I.Q.R.	Skewness	S.E.S.	Kurtosis	S.E.K.
Higher Interest Rate to SMEs than to Large Customers	2.43	0.103	2.42	2	1.280	1.132	1	4	3	3	0.142	0.22	-1.367	0.437
Lower Interest Rate to Older Firms than to Younger Firms	2.18	0.088	2.15	2	0.933	0.966	1	4	3	2	0.415	0.22	-0.768	0.437
Lower Rates to First Time Customers to Gain Loyalty	1.55	0.064	1.47	1	0.500	0.707	1	4	3	1	1.346	0.22	1.956	0.437
Lower Interest Rates to Repeat Customers	2.27	0.070	2.26	2	0.600	0.775	1	4	3	1	0.030	0.22	-0.487	0.437
Interest Rate Smoothing	1.67	0.073	1.62	1	0.640	0.800	1	4	3	1	0.770	0.22	-0.686	0.437
Lower Interest Rate for Firms with Existing Deposit Acct	2.02	0.080	1.96	2	0.766	0.875	1	4	3	1	0.801	0.22	0.200	0.437
Lower Rate for Firms with Exclusive Lending Relationship	2.07	0.082	2.02	2	0.812	0.901	1	4	3	2	0.285	0.22	-0.940	0.437
Higher Rate for Applicants that Cannot Provide Collateral	1.90	0.096	1.83	1	1.107	1.052	1	4	3	2	0.725	0.22	-0.862	0.437
Int Rate is a Decreasing Function of Firm's Credit Rating	2.26	0.086	2.23	2	0.892	0.945	1	4	3	1	0.369	0.22	-0.713	0.437
Int Rate is a Decreasing Function of Owner's Credit Rating	2.07	0.081	2.03	2	0.786	0.887	1	4	3	2	0.582	0.22	-0.275	0.437
Request Collateral from SMEs Before Making Loans	3.05	0.086	3.11	3	0.898	0.947	1	4	3	2	-0.519	0.22	-0.893	0.437
Collateral Requirement Amounts to 100% of Loan Size	3.11	0.085	3.17	3	0.880	0.938	1	4	3	2	-0.649	0.22	-0.692	0.437
Collateral Requirement Differs Btw Large and Small Firms	2.88	0.087	2.93	3	0.920	0.959	1	4	3	2	-0.687	0.22	-0.363	0.437
Collateral for New Customers Different from Existing Ones	2.28	0.092	2.26	2	1.020	1.010	1	4	3	2	0.050	0.22	-1.205	0.437
Collateral Depends on Riskiness of Project Being Financed	3.02	0.077	3.07	3	0.716	0.846	1	4	3	1	-0.619	0.22	-0.127	0.437
Collateral Depends on Firms Credit Rating	2.26	0.086	2.97	3	1.003	1.001	1	4	3	2	-0.457	0.22	-0.943	0.437
Collateral Depends on Owners' Credit Rating	2.59	0.088	2.60	3	0.944	0.972	1	4	3	1	-0.027	0.22	-0.980	0.437
Collateral Depends on Length of Bank-Firm Relationship	2.30	0.089	2.28	2	0.961	0.980	1	4	3	1	0.233	0.22	-0.941	0.437
Collateral Depends on Loan Size, Regardless of Firm Size	3.01	0.086	3.06	3	0.892	0.944	1	4	3	2	-0.681	0.22	-0.418	0.437
Collateral Depends on Strength of Competition for SBL	2.25	0.082	2.22	2	0.805	0.897	1	4	3	1	0.262	0.22	-0.671	0.437
Collateral Depends on the Business Cycle or Macro Factors	2.69	0.085	2.72	3	0.864	0.930	1	4	3	1	-0.110	0.22	-0.882	0.437
Bank Prefers Short Term Lending	2.97	0.079	2.99	3	0.749	0.865	1	4	3	2	-0.171	0.22	-1.145	0.437
Restricts Medium-Long Term Loans to Valued Customers	2.31	0.076	2.29	2	0.701	0.837	1	4	3	1	0.131	0.22	-0.547	0.437
Bank Lends Short, Medium and Long on Case by Case Basis	3.31	0.075	3.36	4	0.681	0.825	1	4	3	1	-0.806	0.22	-0.516	0.437
Loan Maturity is Based on Borrowers' Request	2.67	0.078	2.69	3	0.740	0.860	1	4	3	1	0.059	0.22	-0.769	0.437
Loan Maturity is Based on Nature of Project Being Financed	3.19	0.075	3.24	3	0.672	0.820	1	4	3	1	-0.643	0.22	-0.454	0.437
Loan Maturity is Based on Level of Macro Uncertainty	2.60	0.082	2.61	3	0.808	0.899	1	4	3	1	-0.246	0.22	-0.660	0.437
Acquires Soft Information on SME Before Granting Loan	3.64	0.054	3.70	4	0.350	0.592	1	4	3	1	-1.897	0.22	4.871	0.437
Maintains Relationship with Borrowers Throughout Loan Life	3.67	0.049	3.72	4	0.290	0.538	1	4	3	1	-1.691	0.22	3.868	0.437
Maintains Personalized & Frequent Contact with Customers	3.50	0.051	3.54	4	0.319	0.565	2	4	2	1	-0.582	0.22	-0.682	0.437
Maintains Contact with SMEs Local Community of Operation	2.88	0.066	2.87	3	0.526	0.725	1	4	3	1	0.060	0.22	-0.783	0.437
SME Loan Approval Decisions Are Often Decentralized	2.03	0.087	1.98	2	0.916	0.957	1	4	3	2	0.398	0.22	-0.988	0.437
SME Lending Decisions Are Rule-Based	2.92	0.084	2.96	3	0.860	0.927	1	4	3	2	-0.663	0.22	-0.290	0.437
Frequency of Face-to-Face Meetings	4.45	0.089	4.56	5	0.949	0.974	0	6	6	1	-2.046	0.22	5.321	0.437
Frequency of Non-Physical Communication	4.79	0.083	4.90	5	0.837	0.915	0	6	6	0	-3.012	0.22	11.788	0.437
Direct Knowledge of Borrowers' Business Activities	2.28	0.050	2.31	2	0.304	0.551	1	3	2	1	0.030	0.22	-0.482	0.437
Indirect Knowledge of Borrowers' Business via Stakeholders	3.65	0.133	3.71	4	2.145	1.465	0	6	6	3	-0.606	0.22	-0.358	0.437
Influence of Borrower Knowledge on Setting of Loan Terms	1.50	0.063	1.55	2	0.485	0.697	0	2	2	1	-1.037	0.22	-0.218	0.437
SME Lending is Mostly Based on Relationship Lending	2.57	0.088	2.58	3	0.930	0.965	1	4	3	1	-0.287	0.22	-0.872	0.437

Note:

S.E.M. = Standard Error of Mean

5% T.M. = 5% Trimmed Mean

I.Q.R. = Interquartile Range

S.E.S. = Standard Error of Skewness

S.E.K. = Standard Error of Kurtosis

Most of the variables (23) have an IQR of 1, while 13 of the variables have an IQR of 2. This suggests the relative level consensus among the respondents in ranking these practices. However, only one variable, frequency of non-physical communication, has an IQR of 0. This seems to suggest that there is no disagreement among respondents about their perceptions of the frequency of non-physical communication between loan officers and their business customers. In terms of spread, the data shows that there is a limited degree of dispersion given that the sample variance and standard deviation are less than 1 for majority of the variables. There is however a considerable degree of divergent opinions with respect to certain practices such as the extent to which interest rates on SME loans differ between large and small customers, the extent to which banks charge higher rates for applicants that cannot provide collateral, the extent to which collateral charged differ between new and existing customers and the extent to which collateral depends on a firm's credit rating. Respondents' perceptions are also different on the extent to which loan officers have indirect knowledge of their borrowers' business through information garnered from other stakeholders such as suppliers, customers, competitors and neighbouring businesses of their customers.

4.2.2. Nonparametric Methods for Ordinal Data Analysis

Parametric Versus Non-Parametric Procedures

Theoretical distributions are described by quantities called *parameters*, notably the mean and standard deviation. The term '*parametric*' and '*nonparametric*' are two broad classifications of statistical properties (Conover, 1999). Methods that use the distributional assumptions are called *parametric methods*, because we estimate the parameters of the distribution assumed for the data. Frequently used parametric methods include *t*-tests and analysis of variance (ANOVA) for *comparing groups*, and least squares regression and correlation for *studying the relationship between variables* (Pryce, 2005; Altman and Bland, 2009). All of the common parametric methods ("*t* methods") assume that in some way the data follow a normal distribution and also that the spread of the data (variance) is uniform either between groups or across the range being studied. For example, the two samples *t* test assumes that the two samples of observations come from populations that have normal distributions with the same standard deviation. The importance of the assumptions for *t* methods diminishes as sample

size increases.

Nonparametric methods, on the other hand, are statistical procedures that do not rely on the assumptions about the shape or form of the probability distribution from which the data were drawn (Hoskin, 2005). Examples include: the sign test, Mann-Whitney test, and rank correlation, which do not require the data to follow a particular distribution. They work by using the rank order of observations rather than the measurements themselves (Altman and Bland, 2009). The term non-parametric applies to the statistical method used to analyze data, and is not a property of the data. As tests of significance, rank methods have almost as much power as *t* methods to detect a real difference when samples are large, even for data that meet the distributional requirements. Non-parametric methods are most often used to analyze data, which do not meet the distributional requirements of parametric methods. In particular, skewed data are frequently analyzed by non-parametric methods, although the data transformation can often make the data suitable for parametric analyses (Altman and Bland, 1996).

Table 4.6 shows the different types of parametric tests and their analogous nonparametric procedures.

Table 4.6 Parametric Tests and Analogous Nonparametric Procedures

Analysis Type	Example	Parametric Procedure	Non-parametric Procedure
Compare means between two distinct/independent groups	Is the mean distribution of <i>the proportion of bank's asset portfolio in SME loans</i> different between retail branches and commercial branches?	Two samples t-test	Mann-Whitney U test
Compare two quantitative measurements taken from the same individual, firm or sector	Is the mean distribution of <i>the proportion of bank's asset portfolio in SME loans</i> different between the pre-consolidated banking period (e.g. 1997-2005) and the post-consolidated banking period (e.g. 2006-2013)?	Paired t-test	Wilcoxon signed rank test
Compare means between three or more distinct/independent groups	As we have a sample of 12 banks (e.g. Zenith, First Bank, GTB, etc), we might want to know whether the mean distribution of <i>the proportion of bank's asset portfolio in SME loans</i> is the same across categories of banks	Analysis of Variance (ANOVA)	Kruskal-Wallis (k-samples) test
Estimate the degree of association between two quantitative variables	Is there an association between <i>the proportion of bank's asset portfolio in SME loans</i> and <i>firms' credit rating</i> ?	Pearson coefficient of correlation	Spearman's rank correlation

Source: Adapted from Hoskin (2005) Parametric and Nonparametric: Demystifying the Terms³⁸

³⁸ <http://www.mayo.edu/mayo-edu-docs/center-for-translational-science-activities-documents/berd-5-6.pdf> (accessed 20/08/2014)

For survey results, both *parametric* and *non-parametric* statistical tests are often used to analyze cross tabulations of the survey data (Conover, 1999; Hoskin, 2005). Since crosstabs show the frequency and percentage of responses to questions by different segments or categories of respondents (e.g. loan officers across different banks, loan officers from retail branches versus commercial branches), the independent samples tests can tell us whether there is a statistical difference between the segments/categories in how they answered the question. Much of these analyses were carried out in chapter 5.

Critique of Nonparametric Statistics for Ordinal Data Analysis

It has generally been argued that parametric statistics should not be applied to data with non-normal distributions. Empirical research has demonstrated that non-parametric procedures such as Mann-Whitney U test have greater power than parametric statistics such as *t*-tests unless data are sampled from the normal (Vickers, 2005). Where data are sampled from a normal distribution, the *t*-test has very slightly higher power than Mann-Whitney, the non-parametric alternative. However, when data are sampled from any one of a variety of non-normal distributions, Mann-Whitney is superior, often by a large amount. Hoskin (2005) also points out that if the data deviate strongly from the assumptions of a parametric procedure (e.g. normal distribution), using a parametric procedure could lead to incorrect conclusions.

Given the ordinal nature of the data collected in the current study, nonparametric tests are more appropriate than parametric tests for several reasons highlighted by Bruckers and Molenberghs (2011). First, nonparametric tests are often used for data that are inherently in ranks, and even for data measured in a nominal scale. In this sense, since most of the data generated in this study are scores with limited possible values (such as order of importance, order of agreement and frequency scales on SME lending practices) with only a few measurement variables (such as margin of interest rate discretion, amount of autonomous lending, etc), the use of rank methods is justified. Second, since nonparametric data uses ranks, they are less sensitive to measurement errors. Third, nonparametric statistics are often the only alternative in the case of small sample size, unless the nature of the population distribution is known exactly. Given the relatively small sample size employed in this study (121 loan officers), using parametric statistics is likely to yield misleading results, as the number of observations is not large enough to assume a normal distribution. In fact, the

Shapiro-Wilk's W test for normality was conducted to check if the sample data collected were normally distributed, but the results on all firm/owner characteristics and lender characteristics showed clearly that the observed distribution does not fit the normal distribution (see Tables 4.7. and 4.8).

Table 4.7: Tests of Normality for Firm and Owner Characteristics

	Shapiro-Wilk		
	Statistic	df	Sig.
Purpose of Loan	0.354	121	0.00
Loan Amount	0.770	121	0.00
Loan Security	0.674	121	0.00
Presentation of Business Plan	0.778	121	0.00
Profitability of Business	0.679	121	0.00
Firm's Size	0.851	121	0.00
Firm's Age	0.838	121	0.00
Firm's Transparency	0.855	121	0.00
Firm's Leverage	0.775	121	0.00
Firm's Organizational Form	0.870	121	0.00
Firm's Liquidity	0.831	121	0.00
Firm's Sector of Activity	0.802	121	0.00
Firm's Credit Rating	0.699	121	0.00
Stability of Demand for Firm's Products	0.730	121	0.00
Existence of Deposit Relationship	0.862	121	0.00
Firm's Deposit Account Balance	0.866	121	0.00
Existence of Loan Relationship	0.875	121	0.00
Existence of Fin Mgt Service Relationship	0.877	121	0.00
Length of Relationship with Bank	0.870	121	0.00
Exclusivity of Relationship	0.857	121	0.00
Distance to SME Customer	0.857	121	0.00
Physical Observation of Business	0.829	121	0.00
Owners' Credit Rating	0.721	121	0.00
Owners' Educational Attainment	0.867	121	0.00
Owners' Business Experience	0.789	121	0.00
Owners' Personal Guarantee	0.796	121	0.00
Owners' Personal Wealth	0.867	121	0.00
Owners' Equity Stake	0.791	121	0.00

Table 4.8: Tests for Normality for Lender Characteristics and External Factors

	Shapiro-Wilk		
	Statistic	df	Sig.
Influence of Regulatory Requirements	0.573	121	0.00
Bank's Lending Policies Towards SMEs	0.718	121	0.00
Proportion of Bank's Asset Portfolio in SME Loans	0.847	121	0.00
Sectoral Distribution of Outstanding Loans to SMEs	0.840	121	0.00
History of Previous SME Loan Performance	0.753	121	0.00
Risk Profile of the SME Sector	0.735	121	0.00
Bank's Deposit Level and Financial Stability	0.761	121	0.00
Level of Bank Deposits	0.797	121	0.00
Demand Facing Banks in the SME Loan Market	0.856	121	0.00
Competition from other Banks for SME Loans	0.840	121	0.00
Interest Rates or Returns from Competing Assets	0.855	121	0.00
Maturity Structure of Bank's Security Holdings	0.866	121	0.00
Specialization of Bank's Lending Officers	0.865	121	0.00
High Transaction Costs Associated with SME Loans	0.854	121	0.00
Adequacy of Information on Borrower Financial Condition	0.786	121	0.00
Enforcement Actions from Regulators	0.830	121	0.00
General Macroeconomic Conditions	0.837	121	0.00

Hoskin (2005) and Altman and Bland (2009) point out that, although non-parametric (i.e. rank) methods have the very desirable property of making fewer assumptions about the distribution of the data, they have a few drawbacks. First, non-parametric tests generally are less statistically powerful than the analogous parametric procedure when the data truly are approximately normal. “Less powerful” implies that there is a smaller probability that the procedure will tell us that two variables are associated with each other when they in fact truly are associated. Second, rank methods also have the disadvantage that they are mainly suited to hypothesis testing and no useful estimate is obtained, such as the average difference between two groups. Estimates and confidence intervals are easy to find with t methods. Many non-parametric tests use rankings of the values in the data rather than using the actual data. Third, rank methods have the added disadvantage of not generalizing to more complex situations, most obviously when we wish to use regression methods to adjust for several other factors.

Independent Samples Tests

These tests are applicable to situations where we are trying to compare the means of two independent populations. The test is applicable to comparison of sub-groups, such as ‘loan officers from retail branches’ and ‘loan officers from commercial branches’ based on the

survey sample split. The two samples are assumed to be independent. This is distinct from situations where the researcher observes the same person before and after a period (for such tests, we use the paired samples t-test as illustrated in table 4.6). There are two formulae for calculating the appropriate test statistic for comparing two population means: one assumes equal (or homogenous) variances across the two populations, and the other assumes unequal (or heterogeneous) variances across the two populations (see Pryce, 2005: 6-2 to 6-5). To make computations easy, the relevant SPSS syntax is used to calculate the independent samples significance test for equality of two means, in the first instance assuming pooled variances and in the second instance, assuming different variances.

Levene's Test for Equality of Variances

The test for the equality of variances means a test to see whether the sampling distributions of the two populations have similar or different standard errors. Equality of variances is an assumption for statistical methods such as Analysis of Variance (ANOVA)—a parametric method—and the Kruskal-Wallis one-way analysis—a non-parametric method. The Levene's test is a robust test that is performed to assess the assumption of equality of variances. It is based on very complex formula that weights each case of the sample with a unique group weight. It tests the null hypothesis that the population variances are equal (called homogeneity of variance or homoscedasticity).

$$H_0 : \sigma_1^2 = \sigma_2^2$$

$$H_1 : \sigma_1^2 \neq \sigma_2^2$$

If the resulting p-value of Levene's test is less than some significance level (typically 0.05), the obtained differences in sample variances are unlikely to have occurred based on random sampling from a population with equal variances. Thus, the null hypothesis of equal variances is rejected and it is concluded that there is a difference between the variances in the population. Levene's test is often used before a comparison of means. When Levene's test shows significance, one should switch to more generalized tests, free from homoscedasticity assumptions. We must be able to test for equality of variances in both normally distributed data and non-normally distributed data. There are two separate tests for equality of variances: (1) If we have normally distributed data, we should perform the parametric Levene's test; (2) If we have non-normally distributed data, we should perform the non-parametric Levene's test.

*Mann Whitney U Test (2 samples)*³⁹:

Mann–Whitney *U* test (also called the Mann–Whitney–Wilcoxon (MWW), Wilcoxon rank-sum test, or Wilcoxon–Mann–Whitney test) is a nonparametric test of the null hypothesis that two populations are the same against an alternative hypothesis, especially that a particular population tends to have larger values than the other. In SPSS, the MWW test can automatically compare distributions across groups, such as bank categories or branch type as this study shows. It has greater efficiency than the t-test on non-normal distributions, such as a mixture of normal distributions, and it is almost as efficient as the t-test on normal distributions.

The logic behind the Mann-Whitney test is to rank the data for each sample, and then see how different the two rank totals are. If there is a systematic difference between the two samples, then most of the high ranks will belong to one sample and most of the low ranks will belong to the other one (Hole, 2011). As a result, the rank totals will be quite different. On the other hand, if the two samples are similar, then high and low ranks will be distributed fairly evenly between the two samples and the rank totals will be fairly similar. The Mann-Whitney test statistic "U" reflects the difference between the two rank totals. A table of critical values of U shows how likely it is to obtain a particular value of U purely by chance. The SMALLER it is (taking into account how many participants we have in each group) then the more likely it is to have occurred by chance. The BIGGER the test statistic, the less likely it is to have occurred by chance).

Kruskal- Wallis 1-Way ANOVA (k-samples)

The Kruskal–Wallis one-way analysis of variance by ranks is a non-parametric method for testing whether samples originate from the same distribution (Kruskal and Wallis, 1952). It is used for comparing two or more samples that are independent, and that may have different sample sizes, and extends the Mann-Whitney U test to more than two groups. The parametric equivalent of the Kruskal-Wallis test is the one-way analysis of variance (ANOVA). Since it is a non-parametric method, the Kruskal–Wallis test does not assume a normal distribution of the

³⁹ The Wilcoxon rank-sum test is not the same as the Wilcoxon signed-rank test, although both are nonparametric and involve summation of ranks. The latter is used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ.

residuals, unlike the analogous one-way analysis of variance. If the researcher can make the more stringent assumptions of an identically shaped and scaled distribution for all groups, except for any difference in medians, then the null hypothesis is that the medians of all groups are equal, and the alternative hypothesis is that at least one population median of one group is different than the population median of at least one other group.

Spearman's Rank Correlation Coefficient

This study utilizes nonparametric correlation techniques in analyzing important associations between variables. For example, the study analyses the relationship between measures of SME riskiness, SME credit quality, lender characteristics and environmental factors as well as the relationships between demand side factors and contributory factors to the riskiness of SME loans. The correlation technique used in this study is the *Spearman's rank Correlation Coefficient*. It is a measure of the linear correlation (or dependence) between two variables X and Y , giving a value between $+1$ and -1 (inclusive), where 1 is total positive correlation, 0 is no correlation, and -1 is total negative correlation. It is widely used in the social sciences as a measure of the degree of linear dependence between two variables. Like any correlation calculation, spearman's correlation coefficient is appropriate for both continuous and discrete variables, including ordinal variables.

4.2.3. Econometric Methods

This sub-section describes the empirical models used in the econometric analysis (in particular chapters 6 and 7). The research questions and the hypotheses of the study only make *conditional likelihood procedures* relevant. Conditional likelihood procedures are statistical techniques that estimate the probability of observing a given event conditional on a particular set of parameters. There are several forms of conditional likelihood models, depending on the number and order of the dependent variables. Binary logit/probit models⁴⁰ are used when the

⁴⁰ The main difference between a logit model and a probit model is that for the logit model, the cumulative distribution function (CDF) is the *logistic distribution*, while for the probit model, the CDF is the *standard normal distribution*. In both models, the predicted probabilities are limited between 0 and 1. Both models are estimated by maximum likelihood (ML). The choice between logit and probit models depends on the data generating process, which is unknown. Both models produce almost identical results (different coefficients but similar marginal effects).

dependent variable is a binary response, i.e. it takes on two values: 0 and 1 ($y = 0$ if no, 1 if yes). These binary outcome models estimate the probability that $y=1$ as a function of the independent variables. Multinomial logistic regression is the linear regression analysis to conduct when the dependent variable is nominal with more than two levels. Thus it is an extension of the binary logistic regression, which analyses dichotomous dependents. The ordinal logistic regression (OLR) model, also called the ordered logit model, is a statistical technique with an ordered dependent variable. Examples include: rating systems (poor, fair, good, excellent); opinion surveys (strongly agree, agree, neutral, disagree, strongly disagree); ranking (unimportant, moderately important, important, very important), frequencies (never, sometimes, often, always) etc. Among these conditional likelihood procedures, the only method that suits the ordered structure of the variables obtainable from the questionnaire conducted in this study is the **ordinal logistic regression (OLR)**. The reason for the choice of ordinal logistic regression model over other conditional likelihood estimations such as the binary logit and probit models and the multinomial logit and probit model is that all the variables of interest in this study are ordered outcomes. Where there are ordered outcomes exceeding two categories, with meaningful sequence, OLR models become inevitable (Norusis, 2012; Katchova, 2013; Torres-Reyna, 2014).

Fitting an OLR Model

An OLR model can be used when a dependent variable has more than two categories and the values of each category have a meaningful sequential order where a value is indeed ‘higher’ than the previous one. The categories for the dependent variables are rankings so the numbers do not make sense. For example, even if they are coded as 0, 1, 2, 3, 4 the difference between the first and second outcome may not be the same as between the second and third (Katchova, 2013). Thus, in fitting an OLR model, the event of interest is observing a particular score or less (Norusis, 2012). Assuming we are rating the frequency of loan pricing decisions by Nigerian banks using the following scale: ‘never’ (1), ‘sometimes’ (2), ‘often’ (3) and ‘always’ (4), we can model the following odds⁴¹:

$$\theta_1 = \text{prob (score 1)}/\text{prob (score greater than 1)} \dots\dots\dots(4.1)$$

⁴¹ An odd is the likelihood or probability that an event occurs.

$$\theta_2 = \text{prob (score of 1 or 2)} / \text{prob (score greater than 2)} \dots\dots\dots(4.2)$$

$$\theta_3 = \text{prob (score of 1, or 2, or 3)} / \text{prob (score greater than 3)} \dots\dots\dots(4.3)$$

Notice that for the last category (always - 4), we do not include an equation since the probability of scoring up to and including the last score is 1 (i.e. the only score greater than 3 is 4). This can be better understood by the concept of *cumulative probability*. An OLR model simultaneously estimates multiple equations. The number of equations it estimates will depend on the number of categories in the dependent variable minus one (Snedker et al., 2002). So since we have four categories for the dependent variable, three equations will be estimated. All of the odds are of the form:

$$\theta_j = \text{prob (score} \leq j) / \text{prob (score} > j) \dots\dots\dots(4.4)$$

We can also write equation 4.4 as:

$$\theta_j = \text{prob (score} \leq j) / (1 - \text{prob (score} \leq j)) \dots\dots\dots(4.5)$$

since the probability of a score greater than j is 1- probability of a score less than or equal to j

The ordered logistic regression (OLR) model has the form:

$$\begin{aligned} \text{LOGIT}(p_1) &\equiv \log \frac{p_1}{1-p_1} = \alpha_1 + \beta'x \\ \text{LOGIT}(p_1 + p_2) &\equiv \log \frac{p_1 + p_2}{1-p_1-p_2} = \alpha_2 + \beta'x \\ \text{LOGIT}(p_1 + p_2 + \dots + p_k) &\equiv \log \frac{p_1 + p_2 + \dots + p_k}{1-p_1-p_2-\dots-p_k} = \alpha_k + \beta'x \\ \text{and : } p_1 + p_2 + \dots + p_{k+1} &= 1 \end{aligned} \dots\dots\dots(4.6)$$

This model is known as the proportional-odds model because the odds ratio of the event is independent of the category j . The odds ratio is assumed to be constant for all categories (Snedker et al., 2002). We can define an index model for a single latent variable y^* (which is unobservable, we only know when it crosses pre-defined thresholds):

$$y_i^* = x_i'\beta + \mu_i \dots\dots\dots(4.7)$$

$$y_i = j \text{ if } \alpha_{j-1} < y_i^* \leq \alpha_j$$

The probability that observation i will select the alternative j is:

$$p_{ij} = p(y_i = j) = p(\alpha_{j-1} < y_i^* \leq \alpha_j) = F(\alpha_j - x_i'\beta) - F(\alpha_{j-1} - x_i'\beta) \dots\dots\dots(4.8)$$

For the ordered logit, F is the logistic cumulative distribution function (cdf) $F(z) = e^z / (1 + e^z)$. The ordered logit model with j alternatives will have one set of coefficients with $(j-1)$ intercepts. As noted earlier, the OLR model can be identified by multiple intercepts.

Interpretation of OLR Estimates

The sign of parameters shows whether the latent variable y^* increases with the regressor. As the dependent variable is a multiple factor, the way we interpret the OLR coefficients will also be slightly different from how we would interpret logistic regression coefficients with only one transition. A positive coefficient indicates an increased chance or likelihood that a subject with a higher score on the independent variable will be observed in a higher category. A negative coefficient indicates the chances or likelihood that a subject with a higher score on the independent variable will be observed in a lower category (Snedker et al., 2002). So for example, if we are interested in testing whether the risk premium on an SME loan depends on whether a firm has collateral or not, a positive coefficient will imply that a firm with no collateral to secure the loan is more likely to be charged a higher risk premium, while a negative coefficient will mean that there is a lower likelihood of a higher risk premium with available collateral.

It is worthy of note that logit coefficients are in log-odds units and cannot be read as regular OLS coefficients so that we cannot interpret the magnitude of the coefficients. To interpret, we will need to estimate the predicted probabilities that $y^*=1$ for each score category. OLS provides only one set of coefficients for each independent variable. Therefore, there is an assumption of *parallel regression* (Torres-Reyna, 2014). That is, the coefficients for the variables in the equations would not vary significantly if they were estimated separately. The intercepts would be different, but the slopes would be essentially the same. This means that the results are a set of parallel lines or planes – one for each category of the outcome variable (Norusis, 2012). A significant test statistic provides evidence that the parallel regression assumption has been violated.

OLR Marginal Effects

In addition to the fixed effects OLR, we can also estimate the ordered logit marginal effects. The ordered logit model with j alternatives will have j sets of marginal effects (Katchova, 2013). The marginal effect of an increase in a regressor x_r on the probability of selecting alternative j is:

$$\partial p_{ij} / \partial x_{ri} = \{F'(\alpha_{j-1} - x_i'\beta) - F'(\alpha_j - x_i'\beta)\} \beta_r \dots\dots\dots(4.9)$$

The marginal effects of each variable on the different alternatives sum up to zero. To interpret the marginal effects, we say that each unit increase in the independent variable increases/decreases the probability of selecting alternative j by the marginal effect expressed as a percentage.

Alternative Multivariate Statistical Methods

Apart from conditional likelihood estimations, there are other alternative multivariate statistical procedures, which can be used to analyze survey data (e.g. Principal Components Analysis and Factor Analysis) but were not chosen for the study. Principal Components Analysis (PCA) is a mathematical procedure that transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called principal components. The main advantage of PCA is that it is a dimensionality reduction or data compression method. The main disadvantage is that there is no guarantee that the reduced dimensions are interpretable. Factor Analysis (FA) is a similar statistical procedure that identifies interrelationships that exist among a large number of variables. However, it is mostly suited for *exploratory* or *confirmatory* studies. As an exploratory procedure, factor analysis is used to search for a possible underlying structure in the variables. In confirmatory research, the research evaluates how similar the actual structure of the data, as indicated by factor analysis, is to the expected structure. The main reason for choosing conditional likelihood procedures (in particular, the OLR) over other statistical methods is that they help in studying the relationship between two or more variables or independent samples, without altering the underlying structure of the dataset as does PCA or factor analysis. Moreover, as noted earlier, given the nature of the research questions, only conditional likelihood procedures would help provide statistically viable answers.

Stepwise Regression Analysis

The stepwise regression procedure was employed as part of robustness checks to test the quality of predictors used in the OLR regression models in chapters 6 and 7. The stepwise regression is a multiple regression procedure that is used to determine the best combination of independent (predictor) variables that would predict the dependent (predicted) variable. Hauser (1974) describes stepwise regression as essentially a search procedure to identify which independent variables, previously thought to be of some importance, actually appear to have the strongest relationship with the dependable variable. In stepwise regression, predictor variables are entered into the regression equation one at a time based upon statistical criteria. At each step in the analysis, the predictor variable that contributes the most to the prediction equation in terms of increasing the multiple correlation, R , is entered first. This process continues only if additional variables improve the predictive power of the model or add anything statistically to the regression equation. When no additional predictor variables add anything statistically meaningful to the regression equation the analysis stops. Thus, not all independent (predictor) variables may enter the equation in stepwise regression.

Stepwise analysis is an approach to selecting a subset of variables and to evaluate the order of importance of variables in a regression model. It can be useful in the following situations (a) There is little theory to guide the selection of terms for a model (b) the researcher wants to explore which predictors seem to provide a good fit, or (c) the researcher wants to improve a model's prediction performance by reducing the variance caused by estimating unnecessary terms. However, a number of problems have been identified with the application of stepwise analysis. According to Thompson (1995) and Lewis (2007), there are three problems with using stepwise procedures. First, computer packages use incorrect degrees of freedom in their stepwise computations, resulting in artifactually greater likelihood of obtaining spurious statistical significance. Second, stepwise methods do not correctly identify the best predictor variable set of a given size. This problem is further compounded by the presence of multicollinearity where predictors are correlated with each other. High intercorrelations result in high standard errors for regression coefficients and the consequent exclusion of variables from regression equations (Hauser, 1974). Thus, where independent variables are correlated, relevant variables may be discarded purely on the grounds of collinearity, with resultant

possibility of specification bias. Third, stepwise methods tend to capitalize on sampling error, and thus tend to yield results that are not replicable.

4.3. Limitations of the Study

There is hardly any study within the social sciences that is not met with limitations. Some of the limitations of this study include the following:

Limitations to Scope (One-sided View):

The study only takes a look at the supply-side perspective of bank lending to SMEs, especially in regard to the obstacles to bank finance for SMEs. It does not take into consideration the views of the borrowers or the demand-side. Thus, there may be reasonable grounds for some bias on the part of the respondents. A more comprehensive approach to this study would have been to also collect data from bank-dependent SMEs in Nigeria and compare findings across both the demand and supply sides. In addition, some of the findings of the study, especially those on the economic importance of relationship lending, are based on bankers' opinions and perceptions, which may not necessarily reflect reality.

Limited Data Sources:

There is also a lack of access to important data sources such as bank loan-level, which should contain actual data on the structure and features of SME loans granted by the individual banks. The survey data only provides limited, though valuable, information on the actual (self-reported) practices of banks with respect to SME loans. Apart from qualitative interviews and observation, a possible data collection source is the use of a central credit register containing loan level data rather than bank-level data as well as information on the financial performance and credit quality of businesses as is obtainable in some advanced credit markets like US, Germany, Italy and Spain. This kind of data would have helped to model the actual risk management practices of banks (particularly in SME default risk modelling) and unveil the credit risk of firms more accurately. However, central credit registries are not available in Nigeria. The only source of information in Nigeria is third party information exchanges such as credit bureaus, but they are relatively new and don't have sufficient data on the payment performance of all businesses or the level of loan defaults or delinquencies.

Relatively Low Sample Size:

This study uses a sample of 121 Nigerian bank-lending officers. This is a relatively low sample, given the number of variables that were generated from the survey instrument. Long (1997) states that it is risky to use maximum likelihood estimates in samples less than 100, while samples above 500 should be adequate. However this varies greatly with the data structure under consideration. Studies with very common or extremely rare outcome generally require larger samples. The number of exposure variables and their characteristics strongly influences the required sample size. In connection with this, though a total of 166 variables were generated from the questionnaire, the regression chapters (chapters 6 and 7) that used maximum likelihood estimations (ordinal logistic regression - OLR) only utilized a maximum of 25 variables in any single regression, including 14 dummy variables (12 bank dummies, 1 bank size dummy and 1 branch type dummy). Chapter 5 which utilized mainly descriptive statistics made use of a total of 44 variables, however, not in regression estimations. Discrete exposures also generally necessitate larger sample sizes than continuous exposures. Highly correlated exposures need larger samples as well. Nemes et al. (2009) note that logistic regression overestimates the odds ratios in studies with low to moderate sample size. The small sample size induced bias is a systematic one, bias away from null. Regression coefficient estimates shifts away from zero, odds ratios from one. However, as the sample size increases, the distribution function of the odds ratio converges to a normal distribution centered on the estimated effect. The log transformed odds ratio, the estimated regression coefficients, converges more rapidly to normal distribution.

Hence, care should be taken to note that given the relatively small sample size employed in this study, the distributions of the sample may be highly skewed and odds ratios may have been overestimated. Consequently, the interpretation of the results presented in subsequent analyses may not be totally free from error. Suffice to say that the reason for a relatively insufficient sample size has to do with numerous constraints faced with in the course of the study. These constraints include budget, time and other resource limitations. Nevertheless, it is worth pointing out that, while the sample size of 121 loan officers used in this study may be low relative to the population size and number of exposure variables, it does, however, surpass those used by some authors who have published similar studies in notable journals [e.g. Bruns and Fletcher (2008) - 114 loan officers; Tronnberg and Hemlin (2014) - 88 loan officers].

CHAPTER 5

WHAT CONSTRAINS BANK LENDING TO SMEs IN NIGERIA: DEMAND-SIDE OR SUPPLY-SIDE FACTORS?

5.1. Introduction

Given the trends in SME lending in the post-consolidated banking sector and consequent efforts by the Nigerian government to redress the situation without much success, the question now goes: So what constrains bank lending to SMEs in Nigeria? This study takes a look at the relative influence between borrower characteristics versus lender characteristics in determining SME loan supply. As reviewed in chapter 2, numerous studies have examined the drivers of bank involvement with SMEs and the obstacles considered significant in constraining bank lending to SMEs (e.g. Fletcher, 1995; Cole et al., 2004; Beck et al., 2008b; de la Torre, Martinez Peria and Schmukler, 2010; Bruns and Fletcher, 2008). This research question is thus very important for lenders and policy makers to know where the problem of SME lending lies mostly.

A World Bank survey on Nigerian firms' access to finance showed that most commercial banks are reluctant to provide long-term credit to SMEs (cited in Abosede and Arogundade, 2011). This is because of perceived risks and uncertainties. Lenders cite a number of demand-side factors plaguing the ability of SMEs to obtain bank finance. These include poor record keeping, absence of the appropriate managerial skills, inadequate collateral, and high risk of loan defaults, among other factors. However, there also exist supply-side issues such as high transaction costs, regulatory/market requirements and lack of understanding by the banks of the nature and operations of MSMEs. Other external constraints plaguing the MSME sub-sector in Nigeria include infrastructural deficiencies (especially power and transport), policy inconsistencies, bureaucracy, multiple taxation and levies, weak intellectual property protection and contract enforcement as well as insecurity (Zavatta, 2008; Adigwe, 2012; Asuquo, 2012; Berg and Fuchs, 2013; Sanusi, 2013, Ukoha, 2013a; Gbandi and Amissah, 2014).

In addition to the above, according to a recent World Bank policy research paper (Berg and Fuchs, 2013), lending to SMEs in Africa is largely driven by the structure and size of the economy, the extent of government borrowing and degree of innovation mainly introduced by

foreign entrants to financial sectors, and the state of the financial sector infrastructure and enabling environment. Thus, a good understanding of the interplay of these factors will help us understand the firm-specific, bank-specific and external constraints affecting SME lending and how to improve on the performance of the Nigerian banking sector in this area.

Only a few studies have taken a look at the relative influence between borrower and lender factors affecting bank lending to SMEs in the Nigeria, albeit not from the perspective of a post-consolidated and post-crisis banking sector in Nigeria. For example, since the consolidation of the Nigerian banking industry in 2006, the share of commercial bank loans to SMEs has declined markedly. This study takes a look at the demand and supply side factors that have constrained this reduction in SME lending notwithstanding the fact that Nigerian banks are well capitalized and are among the largest players in Sub-Saharan Africa. In addition, previous studies on bank lending in Nigeria have only focused on the macro view of the determinants of financial intermediation in Nigeria, but no study to the researcher's knowledge has taken a critical look at the micro-level aspects of loan decision-making and the inter-relationships that exists among key determinants of lending and the stakeholders or participants in the SME lending market. This is thus a major contribution of this study to the body of knowledge on bank lending to SMEs in Nigeria. Also, as the study period examined is the period since the 2008 crisis, the study can potentially be used for comparison purposes to show any impact of the crisis on SME lending.

Using survey data on bank loan decision making to SMEs in Nigeria, this chapter investigates by means of descriptive statistics, the demand and supply side factors responsible for constraining SME lending in Nigeria's top 12 banks. The main finding from this study is that *loan purpose, the profitability of SME business operations and availability of collateral* are among the most important borrower factors considered by lenders in SME loan decision making, while *influence of regulatory requirements, bank-lending policies toward SMEs* and the *risk profile of the SME sector* are among the most important bank-level and external factors affecting lenders' inclination to extend credit to SMEs. In line with evidence of similar surveys, this study also reveals that the *high incidence of loan diversion* amongst SME borrowers, *managerial incompetence*, and the *inability of firms to service debts* contribute to the riskiness of SME loans in Nigeria. The recent global financial crisis appeared not to have reduced the nominal value of loans to SMEs in the recent years, but the proportion of total

loan portfolio of banks accounted for by SMEs has been on the decline in both the post-consolidated and post-crisis periods in Nigeria. The rest of the chapter is structured as follows: Section 5.2 examines the hypotheses for the study, while Section 5.3 analyses the findings from the descriptive statistics. Section 5.4 concludes the study.

5.2. Main Hypotheses and Related Literature

Following expectations from related studies on bank lending to SMEs – e.g. Berger and Udell (1995), Berlin (1996), Lehmann and Neuberger (2001) and Cole Goldberg and White (2004), Obamuyi (2007, 2010), Zavatta (2008), Adigwe (2012), Berg and Fuchs (2013), Ukoha (2013a), etc - we can define a set of hypotheses that can be tested by means of statistical tests:

5.2.1. Demand Side Factors

Hypothesis 1: *Lenders will extend credit only when they have high expectations of being repaid and thus will favour borrowers with characteristics that reassure the bank as to the likelihood of being repaid.*

In granting loans to SMEs, commercial banks in Nigeria generally employ some standard criteria, which they use to assess the creditworthiness of borrowers. The range of factors include financial strength, profitability, borrower net worth, track record of loan repayments, management quality, current and previous banking relationships evidenced by bank statements, business prospects, cash flow projections, business risks and availability of marketable collateral. According to Abosede and Arogundade (2011), banks are risk-averse and consider the expected value of returns on an investment vis-à-vis the expected utility of the investment outlay before channeling their funds. In many cases, banks request for personal guarantee for SME loans and usually require collateral in excess of 100% of the loan amount. For example, in making agricultural loans to high-end SME customers, First Bank of Nigeria Plc accepts as collateral landed property with adequate title and marketable value of over 130% of the facility value, or stocks and shares worth 135% of the facility value, or cash

deposit (100%)⁴². In addition, several respondents also reported similar figures in the survey conducted on loan officers in Nigeria, which is considered later in this chapter. Some banks may require prospective borrowers to sign an undertaking that they will lodge a certain percentage of the proceeds or turnover from the business (e.g. 50%) with the lending bank as part of loan covenants. As reviewed in Chapter 2, a debt contract that requires the borrower to show financial commitment in this manner is “incentive compatible” and demonstrates that the borrower will act in the lender’s best interest (Mishkin, 2010; Fletcher, 1995). All these strongly suggest that Nigerian banks tend to shift all credit risk to borrowers, which is a strong indication that banks are not in competition with each other on SME lending.

Hypothesis 1a: *Lenders are constrained by the opacity and risk profile of the SME borrower (firm performance indicators)*

Generally, it is always difficult for the SMEs in Nigeria to meet the standardized requirements of banks. However, when a bank is favorably disposed to lend to small firms, the operational records of the firms with the banks were used to determine the suitability or otherwise of such enterprises in obtaining loan (Obamuyi, 2007). In most cases, these small firms have relatively low financial and operational transparencies as evidenced by shortage of information provided and their poor accounting standards. Many of these firms are also unable to come up with professional business plans or realistic forecasts of cash flow or profit projections. Following from the literature, where a firm’s credit quality cannot be easily ascertained by lenders or creditors, such a firm is said to be informationally opaque and will likely face credit constraints (Hyytinen and Parajarinen, 2008).

Nigerian enterprises are also perceived to be risky due to high risk of diversion of funds, inability to service debts or provide collateral, high costs of doing business, high costs of monitoring loans, poor business experience and weak management capacity of the borrower (Obamuyi, 2010; Sanusi, 2013; Ukoha, 2013a). There is also a general instability in the demand for products made by SMEs. SMEs are unable to compete in domestic and international markets because of the relatively low quality of their products and superior technology used by their large competitors. Consumers sometimes prefer goods imported from

⁴² See First Bank’s conventional term loans and overdrafts, <http://www.firstbanknigeria.com/products/individual/agricultural-finance/conventional-term-loans-and-overdrafts/> (Accessed 27/12/2014)

developed countries. Thus the demand for SME products is limited in both domestic and foreign markets (Adigwe, 2012). This could also be explained by the fact that SMEs have inadequate access to new production techniques and generally have less capital to buy modern equipment. In addition, there is also the risk that the death of the owner could lead to the death of the business, further increasing the chances of loan default.

Hypothesis 1b: *Lenders are constrained by the credit quality of the SME borrower* (credit quality indicators)

Due to the factors aforementioned, SMEs tend to have a very high risk of loan defaults. Hence, commercial banks tend to guard against the loss of their investments by requesting collateral security for loans they grant to SMEs. As noted earlier, most SMEs in Nigeria do not possess fixed collateral (e.g. land and real estate), which in many cases, is most acceptable by banks. Where collateral requirements are not satisfactory, lenders may require owners' personal guarantee or other forms of guarantee, such as cash or near-cash assets or bank guarantee. In this manner, collateral and guarantees play a disciplinary role in the behavior of the borrower (Nakamura, 1994; Voordeckers and Steijvers, 2006). Another very important factor lenders consider is the purpose of loan. Lenders are very much interested in knowing what the loan will be used for in order to allay their fears of possible diversion or misuse of funds (i.e. moral hazard). The most common uses of SME loans are working capital (to finance purchase of raw materials, stock, payment of overheads, etc), asset finance (e.g. vehicles, plant and machinery), project finance, equipment leasing, contract finance, import trade finance or letters of credit and so on.

Sometimes, the existence of a deposit account or loan relationship with the bank may be helpful to give insight into the credit quality of the borrower. As reviewed in chapter 2, banks are likely to favour applicants with pre-existing deposit relationship, loan relationship and/or financial management relationship with the bank, *ceteris paribus* (Nakamura, 1994; Cole, 1998; Boot, 2000). Furthermore, the length of time in which borrowers have been operating their savings/checking accounts and the quality or strength of the customers' relationship with the bankers were sometimes considered by Nigerian banks in lending (Obamuyi, 2007). This is because it is generally believed that the longer the relationship between a firm and a lender, the more time the lender can acquire valuable information about the applicant's credit worthiness (Cole, 1998) which helps in making lending decisions.

5.2.2. Supply-Side Factors

Apart from demand side factors, lenders could also be constrained by their own internal limitations and by external or environmental factors.

Hypothesis 2: *Lenders are likely to be constrained to extend credit to SMEs if their idiosyncratic characteristics and other external/environmental factors are unfavourable*

Hypothesis 2a: *The supply of loans is constrained by lenders' own internal limitations and their SME lending policies (idiosyncratic factors)*

According to the New Keynesian's credit rationing theory led by Stiglitz and Weiss (1981), one of the factors that constrain lenders in the loan market is the presence of asymmetric information (i.e. information gaps) between the lender and the borrower. In this context, loan officers might not have adequate information regarding certain SME proposals. This could be a proposal for which there is limited available market intelligence, and as such reliable information is scarce. The lack of adequate information about a proposed SME segment is likely to result in the rejection of a loan application, given that there might not be enough credit available for all sensible proposals that qualify for bank credit (Stiglitz and Weiss, 1981).

Another factor affecting the supply of loans in Nigeria is high interest rates. High interest rates are not favorable to investors in the sense that the cost of funds could undermine profits, and cause a loss of investment (Ogujiuba et al., 2004). Interest rates in Nigeria officially are as high as between 21 to 26%, and this has a negative impact on the ability of SMEs to obtain credit from the banks. The situation is all the more worrisome when we consider the trends in the manufacturing sector. Commercial banks in Nigeria consider lending to the manufacturing sector as high risk due to the huge operational costs of production in the face of existing infrastructural bottlenecks. Therefore the banks lend to manufacturing companies on differential rates. At times, the interest rate goes as high as 36% or even more. More generally, lenders' risk appetite could also favor policies that tend to restrict SME lending to certain sectors, lend on a short-term basis or demand more stringent requirements. For example, the decision by most Nigerian banks to significantly reduce credit to the capital markets after the collapse of the market during the global financial crisis of 2008-2009.

The quality of the lenders' portfolio and previous history of SME loan performance are crucial to the inclination of banks to further increase its risk assets in the SME sector (Akinleye et al., 2012). As reviewed earlier in chapter 2, a bank's inclination to lend to a borrower is determined by its risk appetite, which is shaped, among other factors, by the history of previous loan performance, the risk profile of the borrower or borrower's sector and general macroeconomic and financial conditions. In the Nigerian case, some of the determinant factors include: the ratio of non-performing loans (NPL) to the total loan portfolio, the proportion of the bank's assets in SME loans as well as the percentage share of SME loans in the amount of impaired assets. Although the ratio of NPL to total loans for most banks is now at an all-time low compared to the 1980s and 1990s, with the present surge in bank credit, banks are even more risk-averse than they were before the credit crisis. Another seemingly important factor for lenders in lending to SMEs is the level of financial stability as evidenced by the level of core deposits and cost of accessing funds. The higher the cost of funds to the lender, the more credit is rationed and by implication, the higher the interest rates on loans advanced.

Hypothesis 2b: *Credit supply to SMEs is constrained by external factors, including the legal and regulatory environment, infrastructural deficiencies and the macroeconomic environment (environmental factors)*

One major external factor affecting banks' willingness and capacity to lend to SMEs is the influence of regulatory and market requirements, which affects the lending behavior of banks. Regulatory requirements such as capital adequacy ratio, reserve requirements, and liquidity ratio, tend to influence the SME lending decisions of banks. For example, Peek and Rosengren (1995b) show that the enforcement of capital-to-asset ratios leads to the shrinkage of new bank lending to bank-dependent customers. By extension, where banks face weaknesses such as undercapitalization, illiquidity, weak/poor asset quality, poor earnings, among others, the inadequate financial resources and distress may constrain credit to SMEs. As shown earlier in chapter 3, the lending behavior of Nigerian banks has also been heavily influenced by the consolidation of the Nigerian banking sector. As expected, larger firms that are created from merger and acquisitions are predisposed to reducing the supply of loans to SMEs post-merger. Asuquo (2012) found that the restructuring and direct effects of the banking sector consolidation in Nigeria show that bank size is negatively related to SME lending.

The difficulty in prosecuting SME owners, in cases of loan default, is another important constraint to bank lending for SMEs. Banks in Nigeria operate in an underdeveloped legal and judicial environment, and as such, they usually restrict lending to borrowers that can provide either sufficient guarantees, or adequate information about their proposed projects. The possibility of loan officers facing the consequences of making wrong loan decisions is amplified by the difficulty in prosecuting loan defaulters. This difficulty in prosecuting loan defaulters stems from the fact that the legal and contractual environment is largely underdeveloped (Ukoha, 2013a). The quality of the legal environment thus influences the pace of credit market growth and the kind of borrowers banks lend to, because the better the legal system, the greater the chances of banks accepting different types of collateral, and hence lending to informationally opaque borrowers (Haselmann and Wachtel, 2010).

Many banks also blame their inability to fund SMEs on the poor economic climate prevalent in the country, citing for instance the low performance of public utilities (such as power supply), poor road network and insecurity as some of the factors affecting the poor performance of SMEs (Ogujiuba, et al., 2004). Infrastructural deficiencies contribute to high costs of doing business, as entrepreneurs have to grapple with problems such as running generators, inadequate marketability of products due to poor road network and security challenges. Finally, the general macroeconomic conditions also shape the demand and supply of credit in the economy. There is evidence to show that the growth of aggregate credit in Nigeria has closely followed the growth of nominal GDP (Akinleye, et al., 2012). However, the proportion of aggregate credit that is allocated to SME loans has declined over the years, which is why SMEs have not been a veritable source of growth in Nigeria.

5.3. Data and Analysis

In order to test the above hypotheses, data was collected primarily by means of a questionnaire survey of loan officers and relationship managers in selected Nigerian banks. The methods of data collection, sampling technique and methods of data analysis have already been described in chapter 4. This section takes a look at the characteristics of the research data collected and some descriptive statistics and tests to see how the variables have behaved in comparison with expected trends in literature. The questions asked in the section on demand and supply side

factors related to how lending is organised at the bank level as well as the characteristics of borrowers and lenders, which influence the bank's willingness to lend to SMEs. It also includes questions on changes in lending policies/risk appetite since the global financial crisis of 2008-09. A total of 44 demand and supply factors affecting bank lending decisions for SME loan propositions were examined, while the respondents highlighted the importance of 11 contributory factors affecting the riskiness of SME loans in Nigeria. Independent samples tests identified significant differences in the way respondents answered the questions depending on the bank they work for or the type of branch they served. This section also examines the changes in the SME lending policies, preferences and practices of Nigerian banks as a result of the global financial crisis. Additional data was also collected from secondary sources such as banks' annual reports, loan policy statements as well as previous survey research/published works on SME financing, to provide adequate and convincing evidence, to support and validate the findings.

5.3.1. Demand-Side Factors Affecting Bank Lending to SMEs in Nigeria

A cursory look at table 5.1 below reveals that the respondents ranked five factors - *purpose of loan*, *profitability of business*, *loan security*, *firm's credit rating* and *owners credit rating* - as the most important borrower factors (each having a median value of 4). The frequency table (appendix 5.1) shows that a vast majority (97.5%) of respondents ranked *purpose of loan* as either important or very important. Purpose of loan is also the only borrower factor that has an IQR of 0, implying that respondents had no disagreement in their perception of the importance of loan purpose in loan decision-making. As earlier discussed, lenders in Nigeria have over the years found that SME customers, especially sole business owners often divert loans granted as working capital or to finance business projects into other private uses. This problem of financial indiscipline obviously impacts on the survivability of the business and equally compromises the ability of the firm to pay back loans (Ogujiuba, et al., 2004). The problem of poor credit worthiness is further compounded by poor loan security on the part of the borrowers (freq. = 90.9%, IQR = 1). As stated earlier, SMEs in Nigeria do not have access to fixed collateral and this affects their chances of obtaining bank loans, most of which have to be collateralised.

Table 5.1. Demand Side Factors Affecting SME Loan Supply in Nigeria

Lending Criteria	Median	Interquartile Range
Purpose of Loan	4	0
Profitability of Business	4	1
Loan Security	4	1
Firm's Credit Rating	4	1
Owners' Credit Rating	4	1
Stability of Demand for Firm's Products	3	1
Firm's Leverage	3	1
Presentation of Business Plan	3	1
Loan Amount	3	1
Owners' Personal Guarantee	3	1
Owners' Business Experience	3	1
Firm's Sector of Activity	3	1
Owners' Equity Stake	3	1
Firm's Liquidity	3	1
Physical Observation of Business	3	2
Existence of Deposit Relationship	3	2
Firm's Age	3	1
Firm's Transparency	3	2
Firm's Size	3	1
Firm's Organisational Form	3	1
Existence of Loan Relationship	3	1
Owners' Personal Wealth	3	1
Firm's Deposit Account Balance	2	1
Length of Relationship with Bank	2	1
Existence of Fin Mgt. Service Relationship	2	1
Exclusivity of Relationship	2	2
Owners' Educational Attainment	2	1
Distance to SME Customer	2	2
Valid N - 121		

The frequency table (appendix 5.1) also shows that almost 96% ranked *profitability of business* as either important or very important. The profitability of business is key to the chances of obtaining bank funds. Bankers are risk averse and will not invest in any business that would not generate good enough returns for their shareholders. In fact, as reviewed in chapter 2, Beck et al. (2008b) found that the perceived size and profitability of the SME lending market were the most important determinants of bank's involvement with SMEs. In particular, they found that 81% of banks in developed countries and 72% of banks in

developing countries indicate that profitability is the most important determinant of their involvement with SMEs, which is corroborated by the result of this present study.

As noted in chapter 2, a *firm's credit rating* or *owners' credit rating* as determined by previous loan repayments or the number of occurrence of loan delinquency usually influences a lender's decision (Cole, 1998; 2008; Cole et al., 2004). In an exploratory study of loan delinquency among SMEs in Ondo State, South West Nigeria, Obamuyi (2007), however, found that loan delinquency rate was as low as 6.9% of total loan obligations to SMEs. The author attributes the results to the sound lending policies of Nigerian banks. Nigerian banks would generally not approve loans to SMEs they think have high probability of default.

The profitability of business is generally believed to be influenced by other factors, which the respondents also rank as important (with a median value of 3) such as *stability of demand for firm's products*, *firm's leverage* or amount of debts outstanding, and *firm's liquidity* or cash flow level. According to the literature, highly leveraged firms are riskier and have greater chances of defaulting on a bank loan because of huge levels of indebtedness (Berry et al., 1993; Cole et al., 2004). With respect to cash flow, lenders generally expect that a firm with greater profitability will be able to demonstrate ability to service its debts out of its earnings (Bruns and Fletcher, 2008). This is because a company's expected cash flow is a primary source of repayment. The more liquid a firm is, the more the greater its chances of meeting its financial obligations. A *firm's age* as a measure of operational stability and *firm's size* as measured by total assets are also crucial factors. Larger, older and well established firms are generally thought of to be more solvent, stable and more diversified than small and younger firms and hence have a higher likelihood of loan repayment, whereas the latter category are more likely to face financing constraints (Haynes et al., 1999; Cole et al., 2004; Behr and Guttler, 2007; Cole, 2008).

Among the least important factors (with a median value of 2) are: *distance to SME customers*, *owners' educational attainment*, *exclusivity of relationship*, *existence of financial management service relationship* and *length of relationship with bank*. These outcomes are indicative of the fact that Nigerian banks rely less on the importance of bank-borrower relationships in making lending decisions to SMEs. In a separate question on the nature of relationship lending in Nigerian banks, 74.4% of loans officers agree that SME lending decisions are rule-based, while only 33.9% of loan officers agree that SME loan decisions are often decentralised. As

such, we can safely conclude that because Nigerian banks have more centralised lending structures, they often discount the role of relationships in making loan approval decisions, a feature that is consistent with many large multi-office banks (Keeton, 1995; Cole et al., 2004).

Borrower Factors: Independent Samples Test

In order to check for patterns on the importance of borrower characteristics, the full sample was divided into sub-groups by bank categories and branch types and then a number of parametric and nonparametric tests were carried out to check the differences in the distribution of the responses by subsamples. The subsamples on bank categories separated the responses by bank IDs, while the subsamples on branch type separated the banks into retail business branches and commercial business branches. The latter indicates that the null hypothesis is to assume that the importance of borrower factors to loan officers serving the lower end of the SME lending market (i.e. retail branches) and to those serving the upper end of the market (i.e. commercial branches) ranks the same way. In all, 56 respondents were from retail business branches, while 65 respondents served SMEs in commercial branches. It should be noted that the multiple tests conducted across these sub-samples revealed significant results by happen chance.

The *Kruskal-Wallis 1-Way ANOVA test* (see table 5.2) reveals that the distribution of the importance of borrower characteristics across various banks is not the same for eight factors: Loan amount (sig 0.009), firm's transparency (sig 0.034), existence of deposit relationship (sig 0.014), firm's deposit account balance (sig 0.001), existence of loan relationship (sig 0.005), length of bank-borrower relationship (sig 0.035), exclusivity of borrower relationship (sig 0.014) and owners' personal guarantee (sig 0.007). This shows some differences in the lending models of banks, particularly in the emphasis given to the role of relationships and requirements for approving loans. For instance, some banks stipulate autonomous lending limits for their selected categories of senior loan officers, branch heads and regional managers, while some other banks do not. In fact, 100% of respondents from a particular bank indicated that all lending functions were centrally executed, including loan appraisal, loan approval, loan monitoring, loan review and loan recovery. This is untrue for many other banks that practice a mix of centralised and decentralised lending strategies, in which case some lending decisions are taken at the centre while others are taken at branch levels.

Table 5.2: Kruskal-Wallis Test For Differences in Distribution of Borrower Factors Across Banks

Independent Samples Kruskal Wallis Test

Hypothesis Test Summary

Null Hypothesis	Significance	Decision
1 The distribution of Purpose of Loan is the same across banks	0.324	Retain the null hypothesis
2 The distribution of Loan amount is the same across banks	***0.009	Reject the null hypothesis
3 The distribution of Loan security is the same across banks	0.165	Retain the null hypothesis
4 The distribution of Presentation of Business Plan is the same across banks	0.077	Retain the null hypothesis
5 The distribution of Profitability of Business is the same across banks	0.32	Retain the null hypothesis
6 The distribution of Firm's Size is the same across banks	0.937	Retain the null hypothesis
7 The distribution of Firm's Age is the same across banks	0.072	Retain the null hypothesis
8 The distribution of Firm's Transparency is the same across banks	**0.034	Reject the null hypothesis
9 The distribution of Firm's Leverage is the same across banks	0.191	Retain the null hypothesis
10 The distribution of Firm's Organizational form is the same across banks	0.249	Retain the null hypothesis
11 The distribution of Firm's Liquidity is the same across banks	0.296	Retain the null hypothesis
12 The distribution of Firm's Sector of Activity is the same across banks	0.506	Retain the null hypothesis
13 The distribution of Firm's Credit Rating is the same across banks	0.105	Retain the null hypothesis
14 The distribution of Stability of Demand for Firm's Products is the same across banks	0.154	Retain the null hypothesis
15 The distribution of Existence of Deposit Relationship is the same across banks	**0.014	Reject the null hypothesis
16 The distribution of Firm's Deposit Account Balance is the same across banks	***0.001	Reject the null hypothesis
17 The distribution of Existence of Loan Relationship is the same across banks	***0.005	Reject the null hypothesis
18 The distribution of Existence of Fin Mgt. Relationship is the same across banks	0.082	Retain the null hypothesis
19 The distribution of Length of Relationship with Bank is the same across banks	**0.035	Reject the null hypothesis
20 The distribution of Exclusivity of Relationship is the same across banks	**0.014	Reject the null hypothesis
21 The distribution of Distance to SME customer is the same across banks	0.485	Retain the null hypothesis
22 The distribution of Physical Observation of Business is the same across banks	0.054	Retain the null hypothesis
23 The distribution of Owners' Credit Rating is the same across banks	0.600	Retain the null hypothesis
24 The distribution of Owners' Educational Attainment is the same across banks	0.715	Retain the null hypothesis
25 The distribution of Owners' Business Experience is the same across banks	0.349	Retain the null hypothesis
26 The distribution of Owners' Personal Guarantee is the same across banks	***0.007	Reject the null hypothesis
27 The distribution of Owners' Personal Wealth is the same across banks	0.115	Retain the null hypothesis
28 The distribution of Owners' Equity Stake is the same across banks	0.329	Retain the null hypothesis

*** significant at the 1% level ** significant at the 5% level

Similarly, the *t-test for equality of means* and the *Mann-Whitney U test* both identify differences in the distribution of three relationship lending factors by branch type (i.e. retail branches vs. commercial branches): Relationship length (sig 0.003), exclusivity of relationship (sig 0.018), and distance to SME customer (sig 0.009) [see appendix 5.3]. The *Levene's test for equality of variances* (see appendix 5.4) reveals that there are significant differences in the way respondents ranked the importance of six borrower factors by branch type: profitability of business (sig. 0.044), firm's size (sig. 0.017), firm's transparency (sig. 0.012), firm's sector of activity (sig. 0.031), owners' educational attainment (sig. 0.03), and owners' equity stake (sig.

0.028). This finding is important because it shows that the profitability of business in retail branches, for example, is perceived to be different from that of commercial branches. Retail branches in Nigeria are characterized by large numbers of financial services users who perform low volume petty trade transactions as against quieter commercial branches with significant volume of businesses. Similarly, the kind of business activities carried out by SMEs in retail branches are mostly small and micro businesses, such as grocery stores, food and drugs, clothes & fashion business, and other retail trades, while commercial branches are known for serving merchants who deal in larger trades such as manufacturing, wholesale product distribution, oil and gas servicing and other relatively large businesses. Hence, this finding confirms that the nature of a firm's industrial sector (contingent on whether the firm operates in a retail or commercial sector) is likely to influence the way bankers evaluate the firm's credit quality (Cole, 1998) as well as the type and maturity of the loan they are ready to finance (Bhaird, 2010). Bankers also show their lending preferences on the basis of whether the firm operates in a low growth or high growth sector (Cosh et al., 2008)

In addition, while majority of business owners in retail branches have 100% equity stake in their business (by virtue of being sole proprietors), many well-established companies in the commercial areas will have more diluted ownership structure and as such, one would expect loan transactions in commercial branches to take the borrower's equity stake in the business into consideration in loan approval decisions. It therefore follows that the personal commitment or guarantee of the business owners is more likely to be able to reduce the risk of lending in commercial branches than in retail branches, thus confirming the importance of owners' personal wealth in credit allocation decisions (Avery, Bostic and Samolyk, 1998).

Correlation Between Key Borrower Factors

The correlation between key borrower factors revealed very interesting findings. First, we look at correlations between key SME performance indicators as measures of the profitability or riskiness of SME business. These correlations show the link between the key performance indicators and the inclination of banks to lend to SMEs. Second, we examine the correlation between the measures of credit quality, which also show how lenders determine the creditworthiness of SMEs from the interaction between key credit quality indicators.

From table 5.3, it can be observed that the presentation of business plan to the lending bank correlates positively with key firm performance indicators, including the profitability of business (rho 0.337, sig. 0), firm's size (rho 0.325, sig. 0) firm's age (rho 0.187, sig 0.038), stability of demand for firm's products (rho 0.233, sig. 0.01) and owners' business experience (rho 0.183, sig 0.044). Conventional wisdom shows that a well-written professional business plan helps the entrepreneur to translate his intended strategies to performance outcomes. DeThomas and Derammelaere (2008) show that a business plan describes a company's structure, operations, and goals as well as helps the entrepreneur to analyze and forecast market trends, demand and sales, estimate costs and make profit projections. Thus if a business plan is followed properly, it should help a borrowing firm obtain needed funds from its financiers, manage its cash flow and debts, generate demand for its products and create a profitable business in the end.

Table 5.3: Correlations Between Key SME Performance Indicators

Spearman's Rank Correlations Between Key SME Performance Indicators as Determinants of Loan Supply									
		Presentation of Business Plan	Profitability of Business	Firm's Size	Firm's Age	Firm's Leverage	Firm's Liquidity	Stability of Demand for Firm's Products	Owners' Business Experience
Presentation of Business Plan	Spearman's rho Coefficient	1	.337**	.325**	.189*	0.173	0.142	.233*	.183*
	Sig. (2-tailed)	.	0	0	0.038	0.058	0.12	0.01	0.044
	N	121	121	121	121	121	121	121	121
Profitability of Business	Spearman's rho Coefficient	.337**	1	.286**	.423**	.231*	.292**	.242**	.284**
	Sig. (2-tailed)	0	.	0.002	0	0.011	0.001	0.007	0.002
	N	121	121	121	121	121	121	121	121
Firm's Size	Spearman's rho Coefficient	.325**	.286**	1	.426**	.242**	.444**	.217*	0.132
	Sig. (2-tailed)	0	0.002	.	0	0.008	0	0.017	0.15
	N	121	121	121	121	121	121	121	121
Firm's Age	Spearman's rho Coefficient	.189*	.423**	.426**	1	0.178	.438**	.225*	.212*
	Sig. (2-tailed)	0.038	0	0	.	0.051	0	0.013	0.02
	N	121	121	121	121	121	121	121	121
Firm's Leverage	Spearman's rho Coefficient	0.173	.231*	.242**	0.178	1	.396**	.352**	.181*
	Sig. (2-tailed)	0.058	0.011	0.008	0.051	.	0	0	0.047
	N	121	121	121	121	121	121	121	121
Firm's Liquidity	Spearman's rho Coefficient	0.142	.292**	.444**	.438**	.396**	1	.444**	.241**
	Sig. (2-tailed)	0.12	0.001	0	0	0	.	0	0.008
	N	121	121	121	121	121	121	121	121
Stability of Demand for Firm's Products	Spearman's rho Coefficient	.233*	.242**	.217*	.225*	.352**	.444**	1	.286**
	Sig. (2-tailed)	0.01	0.007	0.017	0.013	0	0	.	0.002
	N	121	121	121	121	121	121	121	121
Owners' Business Experience	Spearman's rho Coefficient	.183*	.284**	0.132	.212*	.181*	.241**	.286**	1
	Sig. (2-tailed)	0.044	0.002	0.15	0.02	0.047	0.008	0.002	.
	N	121	121	121	121	121	121	121	121

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The profitability of business has a positive correlation with firm size (rho 0.286, sig. 0.002) and firm age (rho 0.423, sig. 0), implying that lenders believe larger and well-established firms

are also likely to be more profitable. Moreover, as noted in Chapter 2, larger and older firms are assumed to be more credit worthy because they are well established and typically more diversified than smaller and younger firms so that they are more likely to obtain bank loans (Cole, et al., 2004; Cole, 2008). They are also thought to be more credit worthy because they have an established track record and are relatively stable and less risky. Firm size is also positively related to the stability of demand for a firm's products (ρ 0.217, sig. 0.017), supporting the fact that the products of most SMEs in Nigeria are unable to compete favorably with those of larger and well-established firms due to inadequate capital, skilled manpower and required technology and this in turn affects their profitability and chances of obtaining bank funds.

Owners' business experience is correlated with the firm's age (ρ 0.212, sig 0.02), showing that lenders believe the importance of a borrower's business experience in making lending decisions is closely linked with the firm's age, thus as the firm grows older and becomes more established, the owners' managerial experience tends to increase as well.

Table 5.4 shows the correlations between key indicators of borrower credit quality. Here, lenders perceive a business owner's credit rating to be positively associated with the firm's credit rating (ρ 0.636, sig 0), implying that the probability of a lender approving a loan for an SME customer on the basis of the owner's credit rating is likely to be enhanced when the borrowing firm also has a good credit rating. As reviewed in chapter 2, a firm that has good financial records such as audited financial statements will be able to convince a bank or other potential lenders of its previous financial performance and allow the lender to assess its creditworthiness from its financial ratios (Kam, 1990; Berger and Udell, 2003, 2006; Bruns and Fletcher, 2008).

In the same vein, the existence of a deposit relationship is positively correlated with the existence of a loan relationship and is very significant (ρ 0.373, sig 0). In relationship lending, firms that have pre-existing relationships with their prospective lenders are likely to have their credit propositions honored because it is expected that over the course of these relationships, the lender would have garnered sufficient information about the credit worthiness of the borrower (Nakamura, 1994; Berger and Udell, 1995; Boot, 2000; Cole et al., 2004). In Nigeria, a borrower with a loan relationship with a bank is likely to also have a deposit account relationship with the same bank. This is reasonable because as stated earlier,

most Nigerian banks usually require borrowers to maintain a minimum deposit balance with them and also channel a certain percentage of their cash flow through the lending bank.

Table 5.4 Correlations Between Key Indicators of Borrower Credit Quality

		Loan Security	Firm's Transparency	Firm's Credit Rating	Existence of Deposit Relationship	Existence of Loan Relationship	Length of Relationship with Bank	Owners' Credit Rating	Owners' Personal Guarantee	Owners' Personal Wealth	Owners' Equity Stake
Loan Security	Spearman's rho Coefficient	1	.321**	0.061	.294**	.239**	0.104	0.172	0.107	0.17	0.119
	Sig. (2-tailed)	.	0	0.508	0.001	0.008	0.257	0.059	0.243	0.062	0.195
	N	121	121	121	121	121	121	121	121	121	121
Firm's Transparency	Spearman's rho Coefficient	.321**	1	0.138	.269**	.291**	.276**	.239**	0.154	0.095	.313**
	Sig. (2-tailed)	0	.	0.132	0.003	0.001	0.002	0.008	0.091	0.298	0
	N	121	121	121	121	121	121	121	121	121	121
Firm's Credit Rating	Spearman's rho Coefficient	0.061	0.138	1	0.146	-0.012	0.116	.636**	0.176	0.108	0.063
	Sig. (2-tailed)	0.508	0.132	.	0.109	0.9	0.203	0	0.053	0.237	0.493
	N	121	121	121	121	121	121	121	121	121	121
Existence of Deposit Relationship	Spearman's rho Coefficient	.294**	.269**	0.146	1	.373**	.238**	.352**	.294**	.240**	.184*
	Sig. (2-tailed)	0.001	0.003	0.109	.	0	0.009	0	0.001	0.008	0.043
	N	121	121	121	121	121	121	121	121	121	121
Existence of Loan Relationship	Spearman's rho Coefficient	.239**	.291**	-0.01	.373**	1	.183*	.218*	.195*	0.059	0.119
	Sig. (2-tailed)	0.008	0.001	0.9	0	.	0.044	0.016	0.032	0.52	0.193
	N	121	121	121	121	121	121	121	121	121	121
Length of Relationship with Bank	Spearman's rho Coefficient	0.104	.276**	0.116	.238**	.183*	1	.206*	0.091	0.153	0.103
	Sig. (2-tailed)	0.257	0.002	0.203	0.009	0.044	.	0.023	0.32	0.094	0.263
	N	121	121	121	121	121	121	121	121	121	121
Owners' Credit Rating	Spearman's rho Coefficient	0.172	.239**	.636**	.352**	.218*	.206*	1	.244**	.244**	.203*
	Sig. (2-tailed)	0.059	0.008	0	0	0.016	0.023	.	0.007	0.007	0.025
	N	121	121	121	121	121	121	121	121	121	121
Owners' Personal Guarantee	Spearman's rho Coefficient	0.107	0.154	0.176	.294**	.195*	0.091	.244**	1	.237**	0.167
	Sig. (2-tailed)	0.243	0.091	0.053	0.001	0.032	0.32	0.007	.	0.009	0.066
	N	121	121	121	121	121	121	121	121	121	121
Owners' Personal Wealth	Spearman's rho Coefficient	0.17	0.095	0.108	.240**	0.059	0.153	.244**	.237**	1	.273**
	Sig. (2-tailed)	0.062	0.298	0.237	0.008	0.52	0.094	0.007	0.009	.	0.002
	N	121	121	121	121	121	121	121	121	121	121
Owners' Equity Stake	Spearman's rho Coefficient	0.119	.313**	0.063	.184*	0.119	0.103	.203*	0.167	.273**	1
	Sig. (2-tailed)	0.195	0	0.493	0.043	0.193	0.263	0.025	0.066	0.002	.
	N	121	121	121	121	121	121	121	121	121	121

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Another observation is that a business owners' credit rating is positively linked with his personal wealth (rho 0.244, sig. 0.007), personal guarantee (rho 0.244, sig. 0.007) and his equity stake (rho 0.203, sig. 0.025). Lenders believe that the decision to grant credit to SMEs is largely dependent on the reputation of the owners, measured by their business or trading experience, professional training or education, technical competence, credit rating, personal wealth, and equity stake in the borrowing firm (e.g. Martin and Staines, 1994; Fletcher, 1995; Cole, 1998, 2008; Dess and Picken, 1999; Cole et al., 2004; Bruns and Fletcher, 2008).

It is worth noting that these interrelationships between credit quality indicators seem to support the reasons mentioned in chapter 2 on why Post-Keynesians argue that the constraints to lending are demand determined, subject to an assessment of borrower quality and creditworthiness. For example, Post Keynesians suggest that bankers accommodate all credit-worthy demands for credit and ration all those demands not deemed creditworthy (Wolfson,

1996). In other words, once lenders perceive a change in the financial condition of borrowers (e.g. a change in their debt repayment patterns, number of delinquencies, cash flow and liquidity levels, or other risk characteristics), they will alter their valuation of the riskiness of lending to such firms accordingly.

Contributory Factors to the Riskiness of SME Loans in Nigeria

The researcher also asked the respondents to rank the factors that contribute to the riskiness of SME loans in line with established causes of demand side market failures (e.g. Owualah, 1988; Zavatta, 2008; BDRC Continental, 2011; BIS, 2012). Table 5.5 shows that lenders rank *high incidence of diversion of funds* (median = 4, IQR =0) and *inability of firms to service debts* (median =4, IQR =1) as the most significant factors affecting the creditworthiness of Nigerian SMEs. About 97.6% and 94.2% of respondents rank these two factors as either significant or very significant, respectively (see appendix 5.5). This supports the ranking of loan purpose as the most important borrower factor in deciding whether to approve or reject a loan. Many small business borrowers in Nigeria, especially sole proprietors often divert funds originally meant for working capital to other personal uses such as marriage and burial ceremonies (Obamuyi, 2010). As noted earlier, this act of financial indiscipline, coupled with the lack of collateral, affects the borrower's ability to pay back loans due. The inability of firms to service debts could also be explained by the level of financial leverage of most bank-dependent SMEs and the overall risk profile of the SME market segment.

Table 5.5 Ranking of Contributory Factors to Riskiness of SME Loans in Nigeria

Factors	Median	Interquartile Range
High Incidence of Diversion of Funds	4	0
Inability of Firms to Service Debts	4	1
Weak Management Capacity (Incompetence)	3	1
Investment in Risky Activities or Volatile Sectors	3	1
High Costs of Doing Business	3	1
Absence of Formal Record Keeping	3	1
Weak Ownership Structure	3	1
Poor Quality of Projects	3	1
Effectiveness of Bank's Loan Screening Procedures	3	1
Term Lending Outside Bank's Scope & Specialization	3	2
Limited Scope of Business Operations	3	1
Valid N = 121		

Lenders also rank other factors such as *weak management capacity*, *investment in risky activities* and *high costs of doing business* (each with a median value of 3) as significant in affecting the riskiness of SME loans in Nigeria. Most SMEs have weak managerial competence because they lack the requisite professional training and business experience unlike their peers in much larger and well-established firms who also have relatively higher access to skilled manpower. The high costs of doing business in Nigeria also affect the performance of SMEs. This is because structural problems such as inadequate power supply, inadequate transportation network and absence of other social amenities tend to drive operational costs high. *Absence of formal record keeping*, *weak ownership structure* and *poor quality of projects* are also significant factors ranked with a median value of 3. The absence of formal record keeping reduces the adequacy of information on the true financial condition of most SMEs and this opacity further contributes to the riskiness of most SMEs. A few other factors, which could be attributed to supply-side constraints, also affect lending to SMEs. These include *effectiveness of bank's loan screening procedures* and *term lending outside bank scope and specialization*, which were also ranked as significant by the respondents. In a similar survey of factors constraining lending to SMEs in Nigeria, Obamuyi (2010) reported the following factors as most important: poor credit worthiness (41.7%), lack of collateral (33.3%), poor project package (33.3%), lack of adequate record (25%), high risk (25%) and diversion of funds (8.3%). In comparison with this study, three of these factors mentioned by Obamuyi (2010) also rank among the significant factors affecting the riskiness of SME loans in Nigeria (as shown in table 5.5), with new variables like inability of firms to service debt, incompetence, high cost of doing business and weak ownership structure appearing as very strong factors affecting the risk profile of SMEs in Nigeria.

The full implications of various constraints to lending have been that commercial banks lending to the SME sector have been mainly doing so on short-term basis. This study further reveals that an estimated 73.2% of commercial bank loans to SMEs in Nigeria have a term of between 0 to 2 years, while the remaining 26.8% of total SME loans are granted for a term of above 2 years. This finding validates the banks' preference for short term lending and their risk-averse lending behaviour towards SMEs.

5.3.2. Supply-Side Factors Affecting Bank Lending to SMEs in Nigeria

Apart from demand side considerations, institutional or bank-level factors as well as the regulatory and legal environment in which Nigerian banks operate could also affect their inclination or willingness to lend to SMEs. Table 5.6 shows the ranking of institutional and environmental factors affecting the supply of loans to SMEs in Nigeria. It can be observed from the table that lenders rank the *influence of regulatory requirements* and *bank's lending policies towards SMEs* (both with a median value of 4) as the most important determinants of lending from the supply-perspective. As noted in chapter 2, the amount of credit banks can loan out to the real sector is influenced greatly by regulatory requirements such as capital adequacy ratio, reserve requirements, liquidity ratio and the central bank's policy rates (Peek and Rosengren, 1995b; Hubbard et al., 2002; McLeay et al., 2014). Higher capital and reserve requirements tend to reduce the quantity of funds available for onward lending to businesses.

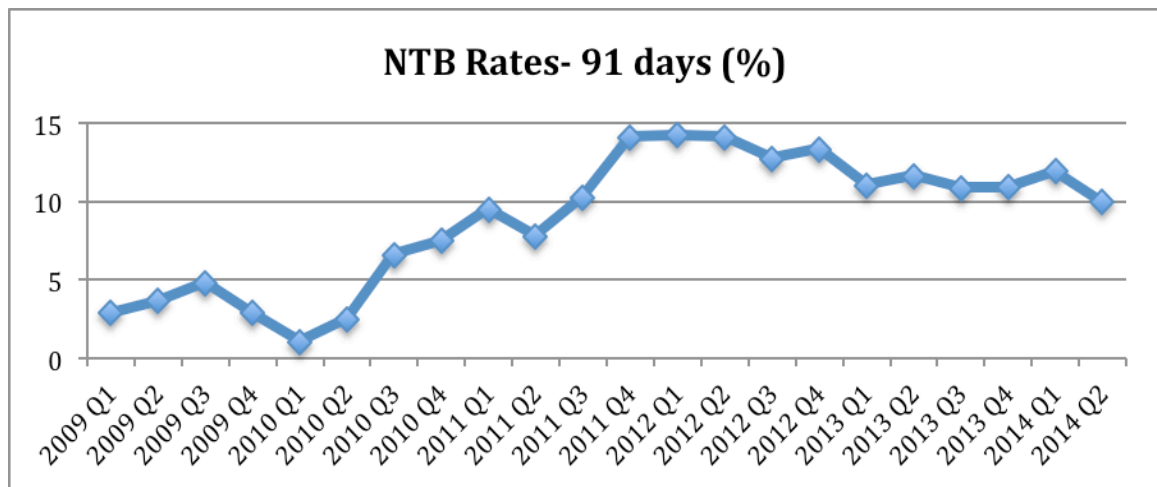
Table 5.6: Institutional and Environmental Factors Affecting SME Loan Supply

Factors	Median	Interquartile Range
Influence of Regulatory Requirements	4	1
Bank's Lending Policies Towards SMEs	4	1
Risk Profile of the SME Sector	3	1
History of Previous SME Loan Performance	3	1
Bank's Deposit Level and Financial Stability	3	1
Adequacy of Information on Borrower Financial Condition	3	1
Enforcement Actions from Regulators	3	1
Proportion of Bank's Asset Portfolio in SME Loans	3	2
General Macroeconomic Conditions	3	2
Interest Rates or Returns from Competing Assets	3	2
Sectoral Distribution of Outstanding Loans to SMEs	3	1
High Transaction Costs Associated with SME Loans	3	1
Demand Facing Banks in the SME Loan Market	3	1
Specialization of Bank's Lending Officers	3	1
Maturity Structure of Bank's Security Holdings	3	1
Competition from other Banks for SME Loans	3	1
Valid N = 121		

In Nigeria, there is strong evidence to suggest that regulatory requirements and legal constraints (e.g. capital adequacy ratio, cash reserve requirements, liquidity ratio and policy

rates) have affected the bank's lending policies. For example, the Central Bank of Nigeria (CBN) increased the cash reserve ratio (CRR) on public sector deposits to 75% in 2013 from 50% in 2012 and also told lenders to lower fees and commissions to reduce costs to customers. The regulator also raised requirements on private sector deposits to 15% from 12% to reduce liquidity and support the value of the naira (Atuanya and Augie, 2014). A consequence of tighter regulations like these is that it limits the inclination and capacity of banks to finance the real sector. Similarly, *enforcement actions from regulators* (median =3; IQR =1) and *sectoral distribution of loans* through government support schemes (median =3; IQR =1) also have the capacity to influence the volume of bank lending to SMEs. Good examples are the CBN/BOI Intervention Fund for SMEs in the manufacturing sector, the SMEEIS initiative, and the Commercial Agricultural Credit Scheme (CACCS), amongst others.

The *interest rate on competing assets*, that is, the yield on alternative investments (median=3; IQR =2) also affects commercial banks' lending behavior towards SMEs. This is influenced to a large extent by government borrowing in Nigeria, which continues to lead to crowding out of the private sector. In financial systems like Nigeria and other Sub-Saharan African countries with relatively weak legal and regulatory structures and financial infrastructure, there appears to be a strong correlation between banks' willingness to lend to relatively risky private enterprises (i.e. SMEs) and the availability of "safer" investment opportunities, such as government securities (Berg and Fuchs, 2013). Banks in Nigeria hold a sizeable proportion of their balance sheet in government securities. The rise in interest rates on government securities such as treasury bill rates (see figure 5.1) lowers banks' appetite for lending to SMEs beyond the established value chains by placing an effective floor for yields (exclusive of the premium above the prime lending rate) that needs to be attained to make lending attractive. With interest rates on treasury bills ranging from 12 to 15%, banks have made government securities their preferred investment option. As one commentator puts it "the monetary policy of the country is pro-government. So the banks are just willing to patronize the government; they don't want to take risks" (Ejembi, 2012 [sic]).

Figure 5.1: Nigerian Treasury Bill Rates (2009-2014)

Source: Central Bank of Nigeria: Government Securities Summary⁴³

In addition, the *general macroeconomic conditions* (median = 3; IQR = 2) in Nigeria also pose significant obstacles to SME financing. For example, commercial lenders in Nigeria bemoan the high inflation and exchange rate volatility as affecting the ease of doing business with SMEs. Earlier, we have identified the poor enabling environment and infrastructural deficiencies as contributing to the riskiness and low performance of the SME sector.

Apart from the above environmental factors, several bank-level (or idiosyncratic factors) also influence Nigerian banks' involvement with SMEs. *High transaction costs associated with SME loans* (median = 3; IQR = 1) are often cited by lenders as affecting the profitability of SME loans. Zavatta (2008) notes that the financing of SMEs is an expensive venture. As reviewed in chapter 2, there are fixed costs associated with all commercial loans, including: (i) administrative costs; (ii) legal fees; and (iii) costs related to the acquisition of information, such as the purchase of credit profiles of businesses from credit bureaus (Zavatta, 2008; Duan, Han and Yang, 2009; Venkatesh and Kumari, 2011). For SME loans, these costs could prove more difficult to recover. Other costs include costs of field inspections and monitoring costs after loan has been disbursed. The problem is more severe in developing countries like Nigeria where the economic information industry is highly underdeveloped and the poor state of certain public services such as registration of property titles and collaterals pose huge

⁴³ <http://www.cenbank.org/rates/govtsecurities.asp> (Accessed 25/08/2014)

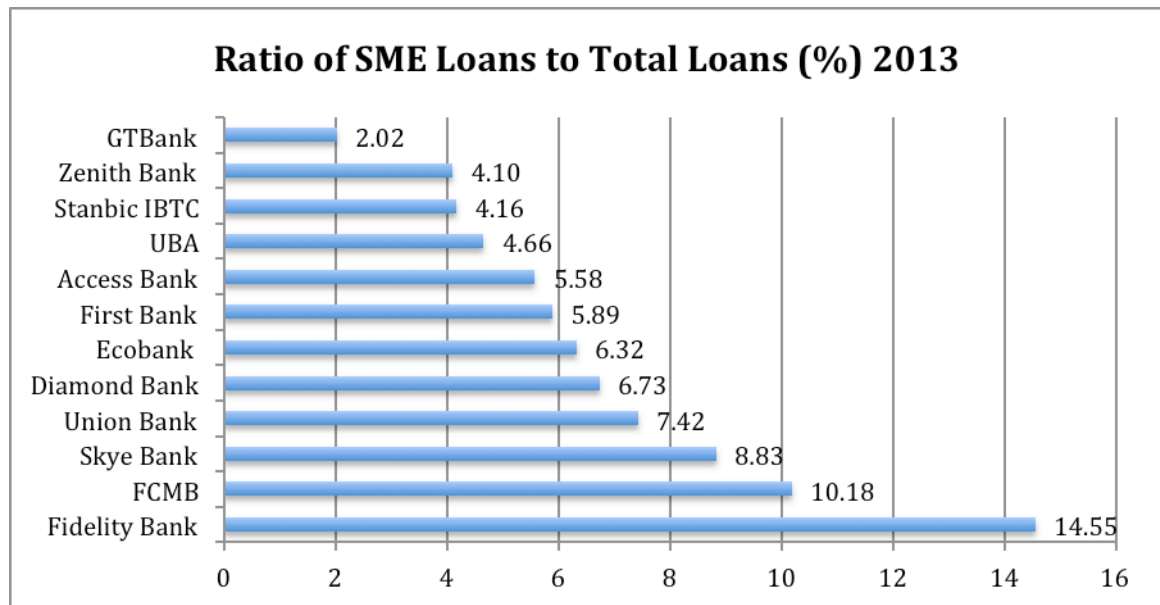
constraints to small-scale loans. To some extent, raising the cost of financing through higher interest rates can solve this problem. For example, commercial banks in Nigeria usually charge SMEs rates far above the prime-lending rate, in order to cover these fixed costs and make the loans profitable (Ogujiuba et al., 2004). To the extent that Nigerian banks charge very high interest rates, they are exploiting SMEs. Nigerian banks are not really interested in lending to SMEs, and therefore charge them high rates to make as much money as possible knowing that there is no bank competition for SMEs. Chapter 5 takes a closer look at the determinants of SME loan rates in Nigeria.

Another idiosyncratic factor affecting bank's involvement with SMEs is the *adequacy of information on borrowers' financial condition* (median = 3; IQR=1). As noted earlier, the information that SMEs can provide to external financiers (in the form of financial accounts, business plans, feasibility studies, etc) often lacks detail and rigor. This problem is often aggravated by the low level of education of Small business entrepreneurs, who may not be in the position to adequately articulate their case (Zavatta, 2008). This problem is particularly acute in developing countries like Nigeria, where the information supplied to bankers and outside investors by family owned SMEs is often not fully accurate and realistic, and hence opaque behavior may prevail. In other instances, entrepreneurs may decline from providing detailed information on their proposal for fear that such disclosure may compromise their intellectual property, or result in piracy (Shane and Cable, 2002). Under these conditions of information asymmetry, banks adopt precautionary measures, such as requiring that financing be collateralised, reduce the amount of financing sought or refuse it altogether (Stiglitz and Weiss, 1981; Zavatta, 2008, Ukoha, 2013a).

Sometimes, banks' inclination to lend to SMEs is determined by the *proportion of total asset portfolio in SME loans* (median = 3; IQR =2) or the share of the loan book accounted for by SMEs. Commercial banks in Nigeria tend to have set targets for the contribution of each strategic business unit (SBU) to their total assets or loan book, and may decide to increase or reduce this share from time to time depending on business and market conditions. These business targets are usually set by the banks' management (Akenbor and Imade, 2011) and are often motivated by the need to satisfy customers (Ikpefan, 2013). Nigerian banks are aware of the economic importance of satisfying customers (e.g. increased cash deposits, revenues and business referrals) and may from time to time vary their loan sales targets in specific customer

segments. Sometimes, there are also regulatory pressures on banks to lend to SMEs for macroeconomic reasons. For example, in an effort to enhance the contribution of SMEs to the Nigerian economy, Fidelity Bank grew its SME loan portfolio by more than 93% between 2012 and 2013 to ₦62 billion (Fidelity Bank Annual Report, 2013). This placed the bank as the lender with the highest share of SME loans to total loan portfolio (14.55%) as at December 2013 (see figure 5.2).

Figure 5.2. Ratio of SME Loans to Total Loans by Top 12 Nigerian Banks (2013)



Source: Various Bank Annual Reports (2013); Investors' Conference Reports; Authors' Calculations

However, according to a recent World Bank Survey of SME lending in five sub-Saharan African countries, Berg and Fuchs (2013) found that Nigerian banks' involvement with SMEs was estimated at an average of 5% of the overall loan portfolio of banks⁴⁴. This appears to be the lowest when compared with 4 other sub-Saharan African countries: Kenya (17.4%), Rwanda (17%), South Africa (8%) and Tanzania (14%). Lending to large corporates and multinational institutions accounts for more than 65% of the loan portfolio of most commercial banks in Nigeria, while SME, retail, mortgage and other types of lending account for the rest of the loan book.

⁴⁴ An estimate from this survey puts the cumulative average ratio of SME loans to total private sector loans at 6.7% as at December 31st 2013.

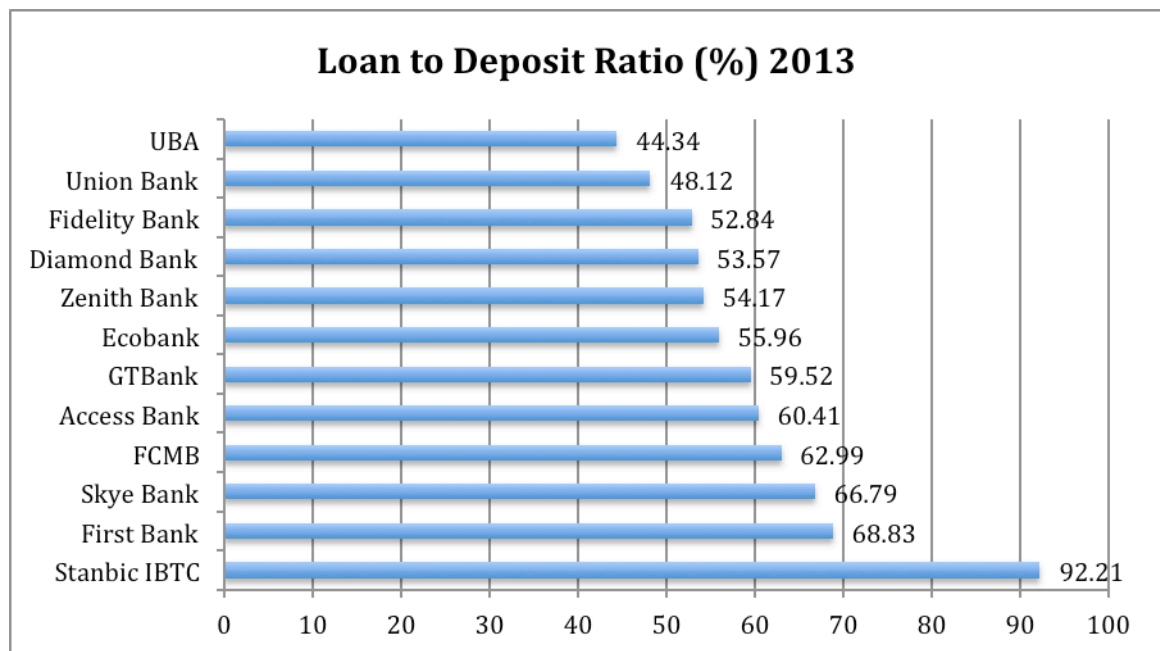
At least in the context of Nigeria, a bank's *deposit level and overall financial stability* (median = 3; IQR=1) is yet another factor that could impact on the decision to approve or reject an SME loan proposition. Banks often have to depend on cheap traditional sources of funds to finance their assets. If the deposit level is low or cost of funds is high, this could impact negatively on the availability and price of loans granted to SMEs. For example, the recent tight monetary stance of the CBN has raised concerns over the competitive landscape among Nigeria's tier 2 banks. This is because some tier 2 banks are facing higher cost of funds than their relatively larger tier 1 counterparts, who can compete favorably for quality loans and generally have better access to cheap retail deposits due to their reputation for safety and wider branch networks (Chima, 2013). In other words, access to bank deposits in Nigeria is crucial to the growth of banks as they rely on these deposits for onward lending. Thus, the loanable funds theory seems to be working in reality in the Nigerian context to the extent that the amount of funds lent to borrowers is affected by the level of deposits that banks have. This has made Nigerian banks to set sales target for marketing executives who are employed to help mobilize deposits from customers and cross-sell other financial products and services (see Akenbor and Imade, 2011). In most cases, these marketing executives are very aggressive and have to grapple with sales targets that are considered realistically unattainable.

A bank in financial distress is also likely to suffer contractions in its money supply and credit to the private sector. According to Ogujiuba et al. (2004), the causes of bank distress may include: (1) incompetent business managers who select inefficient portfolios for the bank with dire consequences for the survival of the banks, and (2) credit concentration to large businesses without diversification in banks' portfolios. Financial stability can also be measured by the ability of banks to cover any unforeseen funding requirements or economic crises. If a bank uses up most of its deposits in loans, it may not have enough liquidity to cover for unexpected customer withdrawals. This is especially true where other sources of funds (including the interbank market) are dried up or are costly to access. In fact, this was the case in Nigeria during the financial crisis in 2009 when the CEOs of five banks (Oceanic Bank, Afribank, Finbank, Union Bank and Intercontinental Bank) that were in financial distress were removed as a result of poor corporate governance practices and excessive risk taking. These banks had ₦1.1 trillion (about £4.4 billion) in bad loans and their liquidity ratios fell below minimum standards required by CBN (Omoh and Komolafe, 2009). The failed banks were characterized by excessively high levels of non-performing loans, lax credit administration

processes and the absence or non-adherence to the bank's credit risk management practices (Omoh and Komolafe, 2009). The banks were also over-reliant on CBN borrowing and the interbank market (i.e. they were constantly visiting the interbank market), which showed a sign of their liquidity stress and imminent insolvency.

The loan-to-deposit (LTD) ratio is commonly used for assessing a bank's liquidity. Figure 5.3 shows that as at December 2013, majority of commercial banks in Nigeria relied on their deposits to make loans to their customers, without any recourse to outside borrowing, though Stanbic IBTC had a much higher LTD ratio (92.21%) than others.

Figure 5.3: Loan-to-Deposit Ratios of Top 12 Nigerian Banks (2013)



Source: Various Bank Annual Reports (2013); Investors' Conference Reports; Authors' Calculations

Idiosyncratic (Bank-Level) and External Factors: Independent Samples Test

In order to check for patterns on the importance of lender and environmental factors, the full sample was divided into sub-groups by bank categories (just like the splitting of borrower factors) and then a number of parametric and nonparametric tests were carried out to check the differences in the distribution of the responses by subsamples. The subsamples on bank categories separated the responses by bank IDs. Suffice to say that an attempt to carry out

statistical tests by branch type did not yield any meaningful results. Consequently, there is little or no evidence to show that the responses on lender and environmental characteristics varied significantly between retail and commercial branches.

The Kruskal Wallis 1 Way ANOVA test (see table 5.7) reveals that the distribution of 11 out of 16 institutional and environmental factors is not the same across banks. This reflects the differences in the perception of loan officers across banks. Loan officers perceive the *influence of regulatory requirements* (sig 0.00) in different ways. As noted earlier, there are significant differences in the way regulatory requirements affect tier 1 and tier 2 banks in Nigeria, for example. So while tier 1 banks have relatively lower cost of funds, tier 2 banks face relatively higher cost of funds due to lower capital base and rising cash reserve requirements. This in turn affects the quantity and cost of loans they advance to the private sector.

Table 5.7. Kruskal Wallis Test for Differences in the Distribution of Lender Factors Across Banks

Independent Samples Kruskal Wallis Test

Hypothesis Test Summary

	Null Hypothesis	Significance	Decision
1	The distribution of Influence of Regulatory Requirements is the same across banks	***0.000	<i>Reject the null hypothesis</i>
2	The distribution of Bank's Lending Policies Towards SMEs is the same across banks	***0.004	<i>Reject the null hypothesis</i>
3	The distribution of Bank's Asset Portfolio in SME Loans is the same across banks	***0.003	<i>Reject the null hypothesis</i>
4	The distribution of Sectoral Distribution of Loans to SMEs is the same across banks	***0.008	<i>Reject the null hypothesis</i>
5	The distribution of History of Previous SME Loan Performance is the same across banks	0.109	Retain the null hypothesis
6	The distribution of Risk Profile of the SME Sector is the same across banks	0.086	Retain the null hypothesis
7	The distribution of Bank's Deposit Level and Financial Stability is the same across banks	**0.047	<i>Reject the null hypothesis</i>
8	The distribution of Demand Facing Banks is the same across banks	***0.003	<i>Reject the null hypothesis</i>
9	The distribution of Competition for SME Loans is the same across banks	**0.042	<i>Reject the null hypothesis</i>
10	The distribution of Interest Rates on Alternative Assets is the same across banks	0.417	Retain the null hypothesis
11	The distribution of Maturity Structure of Bank's Securities is the same across banks	***0.000	<i>Reject the null hypothesis</i>
12	The distribution of Specialization of Bank's Lending Officers is the same across banks	**0.028	<i>Reject the null hypothesis</i>
13	The distribution of High Transaction Costs for SME Loans is the same across banks	0.202	Retain the null hypothesis
14	The distribution of Adequacy of Information on Borrower is the same across banks	***0.042	<i>Reject the null hypothesis</i>
15	The distribution of Enforcement Actions from Regulators is the same across banks	0.433	Retain the null hypothesis
16	The distribution of General Macroeconomic Conditions is the same across banks	**0.024	<i>Reject the null hypothesis</i>
	*** significant at the 1% level ** significant at the 5% level		

Bank's lending policies towards SMEs (sig. 0.004) are different across categories of banks. Banks charge somewhat different interest rates to SME customers depending on a number of idiosyncratic factors such as nature of business, customer segment, firm's turnover level, cost of funds, types of facilities offered, availability of collateral and other factors. Their collateral

requirements in terms of the types of assets accepted might also be different. For example, Diamond Bank tends to accept goods in stock (inventory), vehicles and business equipment as collateral, while some other banks typically don't. First bank has now introduced a new approach to SME lending based on psychometric tests, which is meant to replace the use of collateral in some SME segments (Abioye, 2014). While some banks typically don't give loans of more than 2 years maturity, others might prefer to finance SMEs over longer time periods. Again, while some banks rely more on relationship lending techniques and some level of decentralisation, others strictly adopt a wholly centralised lending strategy and follow hard and fast rules. All these show the divergences in the lending practices of banks.

The respondents also believe that the influence of the *demand facing banks* (sig 0.003) as well as the *competition for SME loans* (sig 0.042) as determining factors for lending to SMEs are not the same across banks. Different banks are attracted to different kinds of SME customers. Banks that tend to emphasise “hard” information or availability of financial records are often attracted to well-established SMEs, while banks that offer some degree of relationship lending techniques may be attracted to firms that by nature face greater credit constraints or are informationally opaque (Berger, et al., 2001, 2005). In addition to matching firm characteristics to banks, the demand facing banks for SME loans could also be determined by geographic and branch network considerations (Cole et al., 2004) as well as regulatory constraints. Notice that bankers perceive the importance of *interest rates on alternative assets* (sig 0.417) to be the same across board, implying that the rates on alternative investments such as treasury bills or other government securities are likely to influence lenders in the same direction (i.e. will dissuade them from lending to risky SMEs) because of the flight to safety and quality.

Correlation Between Key Lender Factors

Here the correlation analysis comes in two fold. First, we examine the correlation between idiosyncratic (bank level factors) and the correlation between external (environmental) factors as key supply side determinants of the availability of loans to SMEs. Table 5.8 shows that the importance bankers attach to their *bank's lending policies towards SMEs* positively correlates with the *proportion of bank's assets portfolio in SME loans* (rho 0.454, sig 0), *history of previous loan performance* (rho 0.457, sig 0), *maturity structure of bank's security holdings* (rho 0.219, sig. 0.016) and *specialization of bank's lending officers* (rho 0.282, sig 0.002).

This shows that a bank's lending policies bear significant influence on these factors and vice versa. In fact, Grodzicki, Halaj and Zochowski (2010) argue that a bank's lending policies are important drivers of credit growth much more than financial (capital and liquidity) constraints because they reflect shifts in the bank's risk preferences and appetite. Thus, the tightening or easing of a bank's lending policies is likely to affect the proportion of its loans to a particular market segment (e.g. SMEs). The history of SME loan performance in turn is likely to change a bank's risk preferences and appetite and hence influence changes in its lending policies towards SMEs.

Table 5.8. Correlation Between Idiosyncratic (Bank Level) Lender Factors

Spearman's Rank Correlations Between Internal (Idiosyncratic) Lender Factors Affecting Loan Supply								
		Bank's Lending Policies Towards SMEs	Proportion of Bank's Asset Portfolio in SME Loans	History of Previous SME Loan Performance	Bank's Deposit Level and Financial Stability	Maturity Structure of Bank's Security Holdings	Specialization of Bank's Lending Officers	Adequacy of Information on Borrower Financial Condition
Bank's Lending Policies Towards SMEs	Spearman's rho	1	.454**	.457**	.193*	.219*	.282**	0.115
	Coefficient							
	Sig. (2-tailed)		0	0	0.034	0.016	0.002	0.208
Proportion of Bank's Asset Portfolio in SME Loans	Spearman's rho	.454**	1	.193*	0.125	.269**	0.141	.186*
	Coefficient							
	Sig. (2-tailed)	0	.	0.034	0.173	0.003	0.124	0.041
History of Previous SME Loan Performance	Spearman's rho	.457**	.193*	1	.243**	0	0.161	0.161
	Coefficient							
	Sig. (2-tailed)	0	0.034	.	0.007	0.996	0.077	0.077
Bank's Deposit Level and Financial Stability	Spearman's rho	.193*	0.125	.243**	1	0.078	0.077	0.156
	Coefficient							
	Sig. (2-tailed)	0.034	0.173	0.007	.	0.396	0.404	0.087
Maturity Structure of Bank's Security Holdings	Spearman's rho	.219*	.269**	0	0.078	1	.423**	0.052
	Coefficient							
	Sig. (2-tailed)	0.016	0.003	0.996	0.396	.	0	0.571
Specialization of Bank's Lending Officers	Spearman's rho	.282**	0.141	0.161	0.077	.423**	1	0.042
	Coefficient							
	Sig. (2-tailed)	0.002	0.124	0.077	0.404	0	.	0.648
Adequacy of Information on Borrower Financial Condition	Spearman's rho	0.115	.186*	0.161	0.156	0.052	0.042	1
	Coefficient							
	Sig. (2-tailed)	0.208	0.041	0.077	0.087	0.571	0.648	.
	N	121	121	121	121	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

In table 5.9, lenders' perception of the *influence of regulatory requirements* is positively related to the *sectoral distribution of loans to SMEs* (rho 0.260, sig 0.004), *demand facing loans in the SME loan market* (rho 0.313, sig 0) and *enforcement actions from regulators* (rho 0.247 sig 0.006). As reviewed in chapter 3, regulatory interventions in favour of SME loans have often involved specific schemes to certain sectors of the economy, such as agriculture, industrial and manufacturing sectors. These schemes in turn have often altered the pattern of demand for bank loans by the private sector. The demand facing banks in the loan market is

also correlated with the *competition from other banks for SME loans* (rho 0.316, sig 0), while the distribution of the importance of *general macroeconomic conditions* is positively associated with a number of factors including the *risk profile of SME loans* (rho 0.315, sig 0.002), *high transaction costs associated with SME loans* (rho 0.255, sig 0.005) and *enforcement actions from regulators* (rho 0.512, sig 0). Suffice to say that poor macroeconomic conditions in Nigeria, namely high inflation, unemployment and exchange rate volatility tend to impact on the risk profile of SMEs, while also triggering changes in policy stance of the regulators and consequent enforcement actions. These in turn affect the conditions on which banks lend to SMEs.

Table 5.9: Correlation Between External (Environmental) Factors

		Influence of Regulatory Requirements	Sectoral Distribution of Outstanding Loans to SMEs	Risk Profile of the SME Sector	Demand Facing Banks in the SME Loan Market	Competition from other Banks for SME Loans	Interest Rates or Returns from Competing Assets	High Transaction Costs Associated with SME Loans	Enforcement Actions from Regulators	General Macroeconomic Conditions
Influence of Regulatory Requirements	Spearman's rho Coefficient Sig. (2-tailed) N	1 . 121	.260** 0.004 121	0.175 0.054 121	.313** 0 121	0.107 0.242 121	.196* 0.031 121	0.16 0.079 121	.247** 0.006 121	0.16 0.08 121
Sectoral Distribution of Outstanding Loans to SMEs	Spearman's rho Coefficient Sig. (2-tailed) N	.260** 0.004 121	1 . 121	.201* 0.027 121	.483** 0 121	.331** 0 121	.200* 0.028 121	0.148 0.104 121	.338** 0 121	.355** 0 121
Risk Profile of the SME Sector	Spearman's rho Coefficient Sig. (2-tailed) N	0.175 0.054 121	.201* 0.027 121	1 . 121	0.151 0.097 121	0.108 0.236 121	0.1 0.275 121	.199* 0.029 121	.441** 0 121	.315** 0 121
Demand Facing Banks in the SME Loan Market	Spearman's rho Coefficient Sig. (2-tailed) N	.313** 0 121	.483** 0 121	0.151 0.097 121	1 . 121	.316** 0 121	.191* 0.036 121	0.17 0.062 121	.230* 0.011 121	.412** 0 121
Competition from other Banks for SME Loans	Spearman's rho Coefficient Sig. (2-tailed) N	0.107 0.242 121	.331** 0 121	0.108 0.236 121	.316** 0 121	1 . 121	.338** 0 121	0.144 0.114 121	0.078 0.395 121	0.112 0.221 121
Interest Rates or Returns from Competing Assets	Spearman's rho Coefficient Sig. (2-tailed) N	.196* 0.031 121	.200* 0.028 121	0.1 0.275 121	.191* 0.036 121	.338** 0 121	1 . 121	0.168 0.065 121	.242** 0.008 121	0.099 0.28 121
High Transaction Costs Associated with SME Loans	Spearman's rho Coefficient Sig. (2-tailed) N	0.16 0.079 121	0.148 0.104 121	.199* 0.029 121	0.17 0.062 121	0.144 0.114 121	0.168 0.065 121	1 . 121	.344** 0 121	.255** 0.005 121
Enforcement Actions from Regulators	Spearman's rho Coefficient Sig. (2-tailed) N	.247** 0.006 121	.338** 0 121	.441** 0 121	.230* 0.011 121	0.078 0.395 121	.242** 0.008 121	.344** 0 121	1 . 121	.512** 0 121
General Macroeconomic Conditions	Spearman's rho Coefficient Sig. (2-tailed) N	0.16 0.08 121	.355** 0 121	.315** 0 121	.412** 0 121	0.112 0.221 121	0.099 0.28 121	.255** 0.005 121	.512** 0 121	1 . 121

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Importance of Borrower and Lender Factors

Appendix 5.7 combines the borrower and lender factors affecting SME loan supply in Nigeria, and ranks them according to level of importance. It can be observed that the overriding factors affecting SME loans in Nigeria are *Loan purpose* (ranked 1st), followed by the *influence of regulatory requirements* (ranked 2nd), *profitability of business* (ranked 3rd), *Loan Security* and

Bank's lending policies towards SMEs, (ranked joint 4th) respectively. The least important factors are *Distance to customer* (ranked 44th), *owners' educational attainment* (ranked 43rd), *exclusivity of bank-borrower relationship* (42nd), *existence of financial management service relationship* (ranked 41st) and *length of relationship* (ranked 40th). The latter factors supports the finding that the role of relationships in influencing lending decisions in Nigeria is undermined.

Financial Crisis and Changes in SME Lending Policies

As reviewed in chapter 3, the global financial crisis of 2008-2009 hit Nigeria's banking sector hard, especially the nation's stock market, which lost more than 66% of its market value during the period. The crisis affected Nigerian banks to the extent that many banks, especially the large players were exposed to huge loans in the capital market and oil and gas sectors, which were at the time non-performing due to the margin calls and rising oil prices. Moreover, the crisis also precipitated the reversal of capital inflows from Nigerian banks back to foreign financial institutions during the dry up of liquidity in the world capital markets. The effect of the crisis soon became evident as banks started to tighten their lending standards and strengthen their risk management practices. Bernanke and Lown (1991) explain that during a recession, reduction in lending levels could be explained by the generally weak state of borrower's balance sheets as result of increased leverage in the years prior to the crisis and falling asset prices thus adversely affecting borrowers' net worth. Banks also suffer from shrinking balance sheet as a result of higher borrower default rates and higher cost of funds. A good example for Nigeria is the case of the 2009 five failed banks explained earlier that were characterised by huge non-performing loans and over-reliance on wholesale markets.

Nigerian banks have since the financial crisis made changes to their lending policies and risk appetite. The survey revealed that 96.7% of relationship managers/loan officers admit that there have been changes in their lending policies towards SMEs. Table 5.10 shows that 95.7% of respondents say that their banks have adopted *more stringent appraisal of SME loan applications*, while 75.9% agree that there have been *no general reduction in lending to SMEs*. The latter finding is consistent with the finding by Ukoha (2013b) that the global financial crisis did not cause a reduction in the volume of loans given to SMEs, since volume of loans to the private sector in Nigeria increased steadily before, during and after the financial crisis. However, when we look at the ratio of SME loans to total loans, the same cannot be

concluded, implying that SME loans have risen at a much slower rate than the growth in gross loans to the private sector (refer to analysis of SME financing gap in chapter 3).

Table 5.10. Changes in Lending Decisions, Preferences or Policies

Lending Criteria, Preferences or Policies	Percentage of Respondents	
	Change	No Change
More Stringent Appraisal of SME Loan Applications	95.7	4.3
General Reduction in Lending to SMEs	24.1	75.9
Reduction in Lending to SMEs and Corresponding Increase in Lending to Larger Firms	28.4	71.6
Decision to Reduce Credit to Some Sectors	83.6	16.4
Decision to Diversify away from Traditional Lending	54.3	45.7
Higher Risk Premium Charges on Certain SME Loans	50.0	50.0
More Stringent Collateral Requirements	81.9	18.1
Preference for Shorter Loan Maturities	70.7	29.3
Greater Weight Given to Credit Rating of SME Borrowers	62.1	37.9
Increase in the Acquisition of Soft information on SME Borrowers	44.0	56.0
Increase in Lending Due to Government Initiatives	39.7	60.3

However, it is interesting to note that only 28.4% the respondents admit that there has been a reduction in lending to SMEs and a corresponding increase in lending to larger firms. 83.6% agree that their banks have taken decisions to reduce credit to some sectors such as real estate, capital markets and other volatile economic sectors as a result of the financial crisis. In developed banking systems, higher loan-to-value (LTV) requirements have been set in markets for collateralised credit to help address correlated market risks. For example, Geanakoplos (2010) advises that banks should not be allowed to lend more than 70% of the assessed value of a residential property. Only 54.3% say there's been a change in the decision to diversify away from traditional lending (e.g. into fee-based services, asset finance, etc) as against 45.7% who say there's been no change. 50% of the respondents admit that their banks charge higher risk premium on certain SME loans. As stated earlier, banks charge higher risk premium on SME loans to cover the fixed costs of lending plus a margin above the prime-lending rate (PLR), which is the rate at which banks lend to large corporates and blue chip companies. A survey of interest rates in Nigerian banks revealed that the spread on SME loan rates above the PLR ranges between 5 to 16%. Majority of the respondents (81.9%) agree that

their banks have adopted more stringent collateral requirements, while 70.7% say that their bank now prefers short term lending. There seems not be a general consensus that government initiatives have been effective in increasing lending to SMEs, thus supporting the findings in chapter 3.

5.4. Chapter Conclusions

This chapter has examined the factors responsible for the financing gap to SMEs, which represent the demand and supply side constraints to loan supply to SMEs in Nigerian banks. The study involved a survey of loan officers and relationship managers in the top 12 commercial banks. Findings from the descriptive statistics reveal that Nigerian banks seem to be risk averse to SMEs and would only lend to borrowers that have characteristics that reassure them of their ability to repay a loan. Banks in Nigeria generally lend between 5-7% of their total loan portfolio to SMEs, on the average. In appraising a loan proposition, loan officers admit that the *purpose of a loan*, the *profitability of a business* and the *availability of fixed collateral* are the most important factors considered. Other important borrower factors include the *borrowers' credit standing* and the *stability of the demand* for their products. Findings also show that the lending model of Nigerian banks does not emphasise the role of bank-borrower relationships in determining the decision to approve or reject a loan as most lending decisions are taken at the centre. Nigerian banks also ranked the *high incidence of diversion of funds*, *weak management capacity* and *the inability of SMEs to service debts* as chief contributory factors to the riskiness of SME loans. According to the lenders, low-end borrowers often diverted funds meant to finance working capital or other projects into personal uses, which when coupled with huge operational costs of doing business in Nigeria, affects their inability to pay back loans due. There were also significant differences in some of the responses of banks based on branch type and bank categories.

Apart from demand side factors, there are also supply-side considerations, which affect the inclination or willingness of banks to lend to SMEs. Here, the main categories are *bank-level or institutional factors* and *external or environmental factors*. The *influence of regulatory requirements* and *bank's lending policies toward SMEs* were regarded as the most important supply side factors in approving or rejecting a loan. There is evidence to suggest that

regulatory requirements and monetary policies in Nigeria have affected banks' lending policies towards SMEs. For example, the recent increase in cash reserve requirement from 50% to 75% and liquidity ratio on private sector deposits from 15% to 12% have affected the availability of loanable funds to the private sector and by implication, to SMEs. Moreover, recent rise in *yield on competing assets*, such as government treasury bills, has led to the crowding out of private sector lending as Nigerian banks hold a sizeable proportion of their assets in relatively safer government securities, which tends to lower their appetite for lending to SMEs. The risk profile of the SME sector is further enhanced by *unfavourable macroeconomic conditions* (namely high inflation, unemployment and exchange rate volatility) as well as *infrastructural constraints* such as inadequate power supply and poor access to good roads, which further exacerbate operational costs of SMEs.

With respect to idiosyncratic (bank-level) factors, lenders believe that the *high transaction costs* associated with processing, monitoring and reviewing SME loans also impact negatively on the profitability of SME loans. This problem is further encouraged by the *inadequacy of information on borrowers' financial condition* due to poor credit record data and proprietary issues on the part of borrowers. This information asymmetry contributes to the reason Nigerian banks charge higher risk premiums for certain SME loans in comparison with larger corporates who enjoy the prime-lending rate (PLR). The *level of bank deposits and overall financial stability* of the lenders are other supply-side factors that impact on the decision to approve or reject an SME loan proposition. There is evidence to suggest that Tier 1 banks in Nigeria enjoy relatively lower cost of funds and relatively greater access to cheap deposits than their Tier 2 counterparts due to their reputation for safety and wider branch networks. Finally, the study also examined the changes in SME lending policies after the crisis. The main finding here is that the financial crisis did not cause a reduction in the volume of loans given to private sector, and by implication, SMEs. However, when the ratio of SME loans to total loans is examined as in Chapter 3, it can be safely concluded that the SME loans have risen at a much slower rate than the growth in aggregate loans to the economy.

CHAPTER 6

THE DETERMINANTS OF RISK PREMIUM AND COLLATERAL ON SME LOANS IN NIGERIAN BANKS

6.1. Introduction

As noted in chapter 2, bank lending to SMEs is one of the most important services banks undertake, though for Nigeria, the contribution of banks to SME lending remains largely inadequate as bank lending to SMEs is a small percentage of bank activity in the post-consolidated Nigerian banking sector as seen in Chapter 3. It is a known fact that lending enables businesses to grow, take on more employees and ultimately generate greater wealth. While the benefits of lending to SMEs and to the wider society are clear, it is important that banks can earn a return on this activity in order to sustain that service throughout the business cycle. Ultimately, banks tend to set the price of lending, even though market forces play a role in the pricing behavior of banks. Lending is one of the key areas for competition as firms choose where to place their business or switch banks: banks that overprice will lose business, while those that underprice will not be able to sustain their operations (BBA, 2011). At the same time, banks may compete for certain groups of borrowers but not for others (for example, in Nigeria, banks tend to compete for large corporate borrowers, while exploiting SMEs).

In performing their financing functions, profit maximising banks (who also seek to gain market share) tend to charge borrowers *interest rates* as high as possible (depending on the riskiness of and potential gross return from their investments) and pay depositors *savings rates* as low as possible (depending on the source of funds). The wider the spreads between these two returns the greater the increase in profits. In addition, the lower the losses and other non-interest costs incurred on the loans advanced, the greater the profits that could be earned by the banks and hence the greater the returns to their shareholders.

This chapter examines the hypotheses on SME loan pricing and then applies them in investigating the determinants of risk premium and loan collateralisation in Nigerian banks. A number of empirical studies have examined the costs of financial intermediation and the determinants of interest spreads in Nigeria (e.g. Afolabi, Ogunleye, and Bwala, 2003; Enendu, 2003; Hesse, 2007; Abayomi and Adebayo, 2010; Haruna, 2011, 2012; Akinlo and Owoyemi,

2012). These Nigerian studies find that interest spreads are affected by overhead costs, the CBN's cash reserve requirements, increased concentration in the banking sector and other financial depth measures (Banking assets/GDP and average loans/average total deposits, etc). Hesse (2007) also finds that increased holdings of liquidity and capital might have led to lower spreads in the immediate pre-consolidated period of 2005, while a stable macroeconomic environment is conducive to a more efficient channeling of savings to productive investments.

However, these studies only consider the cost of overall lending and do not focus on SME loans. The significance of this chapter is thus demonstrated by the fact that it is the only study (to the knowledge of the researcher) that examines the specific determinants of SME loan pricing and collateral determination in Nigeria. In addition, the chapter uses survey data on Nigeria bank loan officers as against secondary data on bank lending, which do not properly capture the idiosyncratic effects of each bank and the microstructure of the banks' lending practices, business models and decision-making processes.

Generally, the micro-level factors determining loan contracts are connected largely to loan risk characteristics, firm and lender-specific characteristics, relationship characteristics, and external factors such as monetary policies, competition and the business cycle. This study finds that for Nigeria, the determinants of risk premium on SME loans are largely connected with factors that underline the opacity and riskiness of SMEs in Nigeria, and are less connected with lender factors such as cost of funds and administrative expenses associated with loan appraisal and disbursement. Relationships also play a role in determining risk premiums. In most Nigerian banks, customers with longer relationships with the bank (i.e. repeat customers) tend to benefit from lower interest rates. What determines the likelihood of requesting collateral from SMEs in Nigerian banks is significantly related to the borrower's risk characteristics, especially the incidence of loan diversion among SMEs in Nigeria. A higher perception of the incidence of loan diversion is likely to cause banks to request collateral from the borrowing firm to secure the transaction. Loan size, firm size and borrowers' credit rating are significant factors that determine the probability that a bank will request full or partial collateralisation.

The rest of this chapter is structured as follows: Section 6.2 examines the main hypotheses and related literature on the determinants of risk premium and loan collateralisation on SME loans. Section 6.3 presents the method of data collection and describes the characteristics and trends

in the data collected. The econometric technique used in this chapter is the ordinal logistic regression (OLR) method, and has been described extensively in chapter 4. However, a short overview is included in sub-section 6.3.3. The definition of the variables used in the regression analysis is also provided here. Section 6.4 discusses the empirical results. The chapter conclusions are noted in section 6.5.

6.2. Main Hypotheses and Related Literature

6.2.1. The Determinants of Risk Premium on SME Loans

As reviewed in chapter 2, there are two competing theories that explain the riskiness of SME lending. While the information asymmetry model championed by Stiglitz and Weiss (1981) explains the riskiness of SMEs in Nigeria from the perspective of their relative opacity and informational deficiencies, most of the hypotheses discussed under this section are consistent with the Post-Keynesian asymmetry of expectations and credit rationing theories. One of the high points of Post-Keynesian credit rationing theory (discussed in chapter 2) relates to the idea of “fundamental uncertainty”, which characterizes the outcome of most investment projects (Wolfson, 1996) and hence determines the risk premium of such projects. As a follow-up therefore, this section examines the micro-level determinants of the risk premium on SME loans. It also examines the external factors influencing loan profitability. A large amount of studies have identified the relationship between loan pricing and a number of borrower, loan and relationship characteristics (e.g. Petersen and Rajan, 1994; Berger and Udell, 1995; Harhoff and Korting, 1998; Lehmann and Neuberger, 2001, etc). We now examine in some detail the influence of these factors on risk pricing of SME loans.

Hypothesis 3: *The determinants of SME loan pricing decisions are more connected with borrowers’ risk characteristics and relationship factors than lender-specific characteristics.*

Borrowing Firm’s Characteristics and Risk Premium

Hypothesis 3a: *Banks are likely to charge higher differential interest rates to SMEs than to large customers*

Firm Size: It is generally believed that smaller firms are more prone to insolvency than large firms because they are usually less diversified on the production and distributions side and are more likely to face financing constraints (Behr and Guttler, 2007). This notion is taken into consideration by banks that do not grant credit to high-risk default risk borrowers. In an empirical study of German SMEs, Harhoff and Korting (1998) observed a negative relationship between firm size and interest rates, indicating that banks may use firm size as a proxy for credit risk. Lehmann and Neuberger (2001) and D'Auria et al. (1999) obtained similar results for Italy and Germany. The reputational effects and greater negotiating power associated with larger firms could help in explaining why they obtain longer-term loans, pay lower interest rates and provide less collateral than their smaller counterparts.

Firm's Age/Opacity: Conventional wisdom in contemporary corporate finance literature argues that younger SMEs are more likely to be less transparent or informationally opaque. Hyttinen and Pajarinen (2008) find that a closely related proxy for informational opacity is a firm's age. Informationally opaque firms are likely to have poor financial records. As noted in chapter 2, it is expected that a firm that has good financial records will be able to convince a bank of its ability to repay a loan. The absence of formal financial records thus increases the credit risk of a firm. In the context of Sub-Saharan Africa including Nigeria, there is acute information asymmetry between young SMEs and their bankers. According to Lefilleur (2009), a number of reasons account for this: First, most SMEs evolve in the informal sector and are therefore not in a position to give banks the minimum information they generally require (e.g. contact details, legal documents, financial statements, etc). In addition, for SMEs evolving in the formal sector, the excessively high level of accounting information required by international/regional financial reporting standards, coupled with the lack of independent, competent and credible accounting firms, have an impact on the quality of information transmitted to banks. Moreover, some entrepreneurs knowingly disseminate very limited or even erroneous information in order to evade taxes. Finally, there are usually no tools that would allow banks to learn about the payment behaviors of their new clients. Credit referencing agencies either do not exist or are ineffective. In this context, banks use informal communication to make up for the shortfall in financial information.

Hypothesis 3b: *Banks are likely to charge higher interest rates to younger and informationally opaque SMEs and lower rates to older and more established large firms.*

Stiglitz and Weiss's (1981) model show that with a given creditworthiness, relatively young firms seeking external finance are likely to be more credit constrained than a pool of more established firms. Diamond (1989) also shows that the joint influence of adverse selection and moral hazard reduces the ability of a recent entrant to raise external finance at a reasonable cost. These problems are most severe when the firm is young (i.e. a start-up) and has only a short track record, because then a severe enough adverse selection (leading to high interest rates) undermines the firm's incentives to behave diligently (e.g. to choose a low risk investment project) as shown by Stiglitz and Weiss (1981). If the firm survives to the next period despite its risky investment decision, adverse selection is less of a problem, for those that survive are, on the average, of better quality. This decreases the interest rates that the financiers demand and thus increases the firm's incentive to choose less risky projects over time.

Hypothesis 3c: *Banks are likely to charge higher interest rates for SME loan applicants that cannot meet the bank's collateral requirements*

Availability of Collateral/Guarantees: On a theoretical basis, the use and strength of personal or business collateral supplied by the borrower should decrease the lender's risk and hence, improve financing conditions (Bruns and Fletcher, 2008; St-Pierre and Bahri, 2011). The bank may insist on a personal commitment from the owner-manager in addition to company guarantees, ensuring alignment of interests between bank and borrower and reducing monitoring costs for the bank (Jimenez and Saurina, 2004). Under these circumstances, the availability of collateral and/or guarantee should reduce interest rates. Secured loans tend to carry lower loss given default and will lead to lower risk premiums. This is the "loss mitigation" effect (Berger, Frame and Ioannidou, 2011). However, some studies have also found that the use of collateral is a signal of high probability of default and is not associated with reduced risk premium (see St. Pierre and Bahri, 2011). This reflects the argument that banks use collateral to control presumed risk, because young, small, more indebted and less solvent firms are more likely to be asked to guarantee loans. The finding suggests that the dominant reason collateral banks require collateral is to help detect riskier borrowers ("lender selection" effect).

Hypothesis 3d: *Interest rate is likely to be a decreasing function of the applicant firm's/owner's credit rating*

Firm/Owner's Credit Rating: Credit risk is related to the firm's financial standing and its ability to meet its financial obligations. According to Bruns and Fletcher (2008), the lender's probability of advancing credit to the borrower could be dependent on both past performance and current financial standing of the borrower. Past performance, measured by profit and losses in the past increases or decreases the financial strength of the firm. In addition, the number of business credit obligations on which the firm has been delinquent in the past is a negative function of the quantity and cost of credit extended to the firm. Current financial position is mainly an indicator of whether or not the borrower is solid enough to repay the loan should the individual project that money is sought for fail. Therefore, the effect of financial standing on the credit decision is similar to that of collateral – a strong financial position indicates that the borrower is able to repay the loan irrespective of the outcome of the project. Machauer and Weber (1998) confirm in their study a highly significant impact of credit rating on loan prices, with a better rating lowering the cost of capital.

Lender Characteristics and Risk Premium

The pricing of loans to businesses can more closely be explained in terms of the *cost*, *revenue* and *risk* elements associated with lending activity. As we know, the profitability of any venture is directly determined by two major components: cost and revenue. The revenue components of lending include interest income and other non-interest fees. *Interest income* is interest earned on loans and other earning assets. The importance of interest income to profitability is dependent on the relative proportion of earning assets (compared to non-earning assets) in a bank's total asset portfolio (Gup and Walter, 1989). Apart from interest income, banks also earn revenue from fees charged on loans (Churchill and Lewis, 1986) and similar financial services such as hire purchase, factoring and other asset-based lending.

Hypothesis 3e: *Banks are likely to charge higher risk premiums on SME loans because of higher cost of funds, cost of risk and costs of loan administration.*

The BBA (2011) has identified three key drivers behind how banks price lending to SMEs: (1) cost of funds, (2) cost of risk and capital, and (3) cost of administration.

Cost of Funds: The risk premium on loans is usually affected by the cost of mobilizing liquidity and accessing capital. According to the loanable funds theory, in order to lend money to businesses, banks need to attract funds from depositors by paying them interest. They also need to aim to hold deposits for similar lengths of time as the term of loans financed. As mentioned in chapter 5, this seems to be the case in Nigeria where banks aggressively mobilize deposits from customers and pay higher interest rates for longer-term deposits. They also offer less stringent terms for cash backed loans (according to the survey of Nigerian loan officers). Hubbard, Kuttner and Palia (2002) in a recent study investigated the effects of banks' financial condition on the borrowers' risk premium after controlling for borrower risk and information costs. They find that capital-constrained banks charge higher loan rates than well-capitalised banks and that this cost difference is especially associated with borrowers for which 'information costs' and 'incentive problems' are most important (pp. 561). Their result is also consistent with models that allow banks to charge a risk premium to borrowers facing switching costs in bank-borrower relationships as well as models of the bank-lending channel of monetary transmission. The former concept refers to borrowers that switch from one bank to the other in search of better credit relationships and have to bear the costs of building credit reputation and transferring proprietary information to the new lender. The latter concept is explained below under the credit channel of monetary policy.

Cost of Risk and Cost of Holding Capital: Costs can also be reckoned in terms of the risks associated with bank lending such as funding liquidity, credit, and capital risks. All banks face the risk of maturity transformation of assets and liabilities. They borrow short-term funds (liquid liabilities) to finance long-term (illiquid) loans so that there is a disconnection between their short term funding and their expected future cash flows. Banks are therefore exposed to 'funding liquidity risk' (Brunnermeier et al., 2009) and this affects their profitability and long-run survival. For example, if banks face unexpected withdrawal of deposits on a large scale and are unable to control the resulting cash shortage by borrowing from money markets, they may be forced into early liquidation of their assets (i.e. fire sale) in order to realise cash, thus lowering their book value. The situation becomes worse if contagion occurs: the entire banking system will become vulnerable to destructive bank runs (Diamond and Dybvig, 1983) and confidence in the system will disappear quickly as the entire credit markets cease to function.

Banks also face credit risk or the risk that a borrower or counterparty will be unable to repay a loan or interest due on the loan on the due date. Mainstream theory suggests that increased exposure to credit risk is normally associated with lower bank profitability (e.g. Athanasoglou et al., 2008). However, in Post-Keynesian economics, banks are equally prepared to face higher credit risk with large firms because lending to them is more profitable, while small borrowers are likely to have a higher possibility of deviation from their expected rate of return than large firms due to uncertainty and other factors such as competition and macroeconomic conditions (Basu, 2003). In any case, banks are able to improve credit risk through effective screening and monitoring of borrowers. There is some evidence that large bank institutions are less likely to lend to relatively young and informationally opaque entities because they lack good credit reputation and hence could pose serious credit risks to lenders (Haynes, Ou and Berney, 1999; Berger and Udell, 2006). On the liability side, banks could be significantly dependent on a particular source of funding, e.g. borrowing heavily from the wholesale interbank markets or through securitisations. In the Nigeria credit market, however, banks are more reliant on customer deposits than wholesale funding, except in situations of financial distress.

Now turning to capital risk, banks are highly levered financial institutions and the volume of their businesses is in multiples of their regulatory capital. According to the Basel capital accord, banks are required to keep about 8% of their assets in capital (CAR). Banks are required to hold adequate capital to cushion the risks of loan losses and insulate depositors by providing a first line of reserve to absorb such losses. However, increased nominal capital requirements often results in banks taking on extra risks on their portfolios, and this could, under some circumstances, actually increase the probability of bank failure, even if it improves the bank's franchise value⁴⁵.

Administration Costs: Administration costs refer to the costs directly associated with the loan administration and monitoring function, e.g. salaries of loan officers and other support staff, benefits and other loan-related office expenses such as telephone bills, postage, photocopying, transportation, etc (Churchill and Lewis, 1986:197). Smaller loan facilities tend to have a relatively higher administrative cost per unit of currency lent than larger facilities,

⁴⁵ Franchise value means the present value of the bank's stream of future profits.

and not all of that cost can be recovered through fees. So small loans tend to bear higher margins, even if the risk is comparable with larger lending. Due to their size, large banks are likely to incur higher operating and monitoring costs for smaller loans than for larger loans due to diseconomies of scale. This suggests that most large banks are likely to lend predominantly to larger corporates that seek out larger loans, and hence find relationship lending to small local customers less cost effective and profitable.

The Role of Relationships in Loan Pricing

Hypothesis 3f: *Banks are likely to offer lower interest rates to repeat customers (i.e. customers with longer relationship with them)*

Relationships also play a role in the determination of SME loan contracts. As examined in chapter 7, relationship lending involves the acquisition of soft information by the lender about the prospective borrower through one-to-one personal contact over time in which case the loan officer uses the soft information obtained to make lending decisions. Several studies have also found that relationship driven banks are able to benefit from the inter-temporal smoothing of contract terms – e.g. by sacrificing short-term for long-term gains when they offer subsidized credit to growing enterprises (Sharpe, 1990; Rajan, 1992; Petersen and Rajan, 1994, 1995; Berger and Udell, 1995; Berlin and Mester, 1998; Boot, 2000). In addition, Berger and Udell (1995) found that borrowers with longer relationships pay lower interest rates and are less likely to pledge collateral. These results are consistent with theoretical arguments that relationship lending generates valuable information about borrower quality.

Hypothesis 3g: *Banks are likely to charge younger firms lower interest rates at the beginning of their banking relationship with the hope of making higher returns in later years when their business has become established (interest rate smoothing)*

Since relationship lending involves a personal touch with local customers, relationship-driven banks by virtue of their proximity to the local customers are arguably more efficient than their non-relationship banks in delegated monitoring and enforcement of loan contracts (Diamond, 1984; Nakamura, 1994). This in turn improves loan quality, though this may not necessarily improve lending profitability because small loans are also associated with higher costs of

lending as literature suggests. In addition, through multiple interactions with the customer, smaller banks are able to appraise their clients' investments and provide support services (e.g. business planning, accounting and tax planning solutions etc) in order to add real value to the client and ensure better cash flow.

External Factors Affecting SME Loan Pricing

Apart from borrower and lender factors, a number of external factors impact on the pricing of SME loans. These include the credit channel of monetary policy, the credit market structure and business cycle fluctuations, among other external or macroeconomic factors

The Credit Channel of Monetary Policy: According to the credit channel theory presented by Bernanke and Gertler (1995), the direct effects of monetary policy actions such as changes in short term interest rates are amplified by endogenous changes in the external finance premium (EFP), where $EFP = \text{cost of funds raised externally (by issuing equity and debt)} - \text{cost of funds raised internally (by retaining earnings/profits)}$. The size of the EFP reflects imperfections in the credit markets that drive a wedge between the expected return received by lenders and the costs faced by potential borrowers. Accordingly, a change in monetary policy (i.e. an increase or reduction in interest rates) tends to change the EFP in the same direction. Thus the impact of monetary policy on the cost of borrowing is magnified because of the effect on the EFP.

Bernanke and Gertler (1995) describe two sub-channels of the credit channel: (1) the balance sheet channel (explains the potential impact of monetary policy on borrower's balance sheet and (2) the bank lending channel (focuses on the possible effects of monetary policy on the supply of loans by lenders). The latter is more important for the purpose of this study. Monetary policy affects the EFP by shifting the supply of intermediate credit, particularly loans by commercial banks. This is the bank-lending channel. Given the frictions in credit markets (e.g. an increase in information asymmetry or asymmetry of expectations), a reduction in the supply of bank loans for whatever reason may cause bank-dependent borrowers (e.g. SMEs) to have reduced access to credit and hence increase the external finance premium. They may not be totally constrained from obtaining credit, but they are virtually certain to incur costs associated with finding a new lender and establishing a credit

relationship. The analysis of both the balance sheet and bank lending channels of the credit view also shows that the EFP increases for a longer time than the increase in short term interest rates, magnifying the effect of a policy-induced credit constraint.

The Credit Market Structure: The structure of the lending market banks operates in influences the profitability of commercial lending to SMEs. The bank market structure defines the degree of market concentration or competition among banks of similar or different characteristics, which in turn affects the level of profits they make. Recent evidence from Berger, Rosen and Udell (2007) show that market size structure⁴⁶ has been found to affect the quantity and price of loans to businesses by banks of different sizes. They found that large banks tend to charge lower premiums on loans than small banks and that this is so because large banks tend to operate in local markets with high market shares for large banks. Higher bank profits and interest margins would only be consistent with relatively weaker competition, supporting the notion of a negative relationship between competition and loan profitability (e.g. Short, 1979). However, because of this inverse relationship between competition and loan profitability, banks now try to build comparative advantage, for example they offer relationship lending in order to diversify their services from those of other banks and, in the process, to earn more additional income. Chapter 7 expounds on this. In addition, for post-Keynesians, competition is not determined solely by the number of players in the market but also by the rate of return that lenders expect from different borrowing groups (Basu, 2003). So for example, there is more competition for large customers than small ones because they offer a higher expected rate of return. In Nigeria, the high-risk premium charged to SMEs can be explained largely by the lack of bank competition for SMEs.

Business Cycle Fluctuations: During a downward slope of the business cycle, the risk of business loans and the related capital requirements of banks tend to increase. There is therefore a danger that banks become less forthcoming in extending loans, thus reinforcing the cyclical slowdown in what is called a “credit crunch” (Bikker and Hu, 2002). There is a possibility that loans will be extended less liberally during a cyclical downswing, the argument being that risk premiums are, in fact, assumed to be insufficient cover for the increased risk or

⁴⁶ Market size structure according to Berger et al. (2007) refers to the distribution of shares of different size classes of local market participants, where the sizes are inclusive of assets both within and outside the local market.

inadequate due to adverse selection and moral hazard problems (Stiglitz and Weiss, 1981). Moreover, during a downswing, loan demand tends to be more interest elastic than during normal times.

6.2.2. The Determinants of Loan Collateral

As noted earlier, the theoretical literature on collateral demonstrates that collateral can be used to reduce adverse selection problems (Stiglitz and Weiss, 1981, Chan and Kanatas, 1985; Besanko and Thakor, 1987a,b; Mishkin, 2010). The following are the main drivers of the use and amount of collateralisation.

Hypothesis 4: *Nigerian banks request collateral from SMEs before making loans and collateral requirement usually amounts to 100% (or more) of the loan size.*

As noted in Chapter 5, Nigerian banks request for personal guarantee for SME loans and usually require collateral in excess of 100% of the loan amount. For example, in making agricultural loans to high-end SME customers, First Bank of Nigeria Plc accepts as collateral landed property with adequate title and marketable value of over 130% of the facility value, or stocks and shares worth 135% of the facility value, or cash deposit (100%)⁴⁷. In addition, several respondents also reported similar figures in the survey conducted on loan officers in Nigeria. The reason for banks requiring a high collateral-to-loan value reflects the lenders' consideration of the fact that small business borrowers will more likely default under poor economic circumstances when the value of their collateral is lower (Epstein and Graham, 1991). Moreover, legal and practical problems of monitoring the collateral and gaining control of it at the time of default can be quite significant and costly.

⁴⁷ See First Bank's conventional term loans and overdrafts, <http://www.firstbanknigeria.com/products/individual/agricultural-finance/conventional-term-loans-and-overdrafts/> (Accessed 27/12/2014)

Collateral and Loan Characteristics

Hypothesis 4a: *Banks' collateral requirement depends on the loan size, regardless of whether the firm is large or small.*

Loan Size: Jimenez et al. (2006) found a positive relationship between loan size and the probability of requesting collateral from SMEs and opined that loan size indicates a lender's relative increase in credit risk. However, predictions from Boot et al. (1991) and Jimenez et al. (2006) reveal that the amount of collateral pledged in a particular loan will increase if the loan is granted in a period of higher real interest rates and will decrease with the size of the loan.

Hypothesis 4b: *Bank's collateral requirement depends on the risk of loan default.*

According to Cowling (1999b), the purpose for which a loan is being requested is important in order to ascertain the riskiness of the loan contract. For example, the riskiness of a loan being used to finance investment in fixed assets will be different from the riskiness of a loan used as working capital or to finance cash expenses.

Incidence of Loan Diversion: Sometimes, especially among micro-enterprises, loans are requested for one purpose and later diverted into other uses not approved by the bank. For example, in Nigeria, loan diversion is a key moral hazard issue, particularly for the lower end MSME customers. It was ranked as the most significant contributory factor to the riskiness of SME loans in Nigeria. Moreover, a number of studies have found that loan diversion is one of the principal factors affecting the repayment of loans in Nigeria, particularly among small-scale farmers, traders and artisans (see Afolabi, 2010; Oboh and Ekpebu, 2011; Edet et al., 2014). Many of them cite family commitments of the owners, untimely disbursement of loans and high cost of agricultural production as the main reasons for default. To mitigate the risk of default associated with loan diversion and tie the incentives of the borrower with that of the lender, many banks request collateral.

Loan Duration: Long-term loans and short-term loans also explain the likelihood of collateral covering 100% of the face value of the loan (full collateralisation) or the loan being only partially covered by the collateral (Jimenez et al., 2006).

Collateral and Borrower Risk Characteristics

Hypothesis 4c: *Banks' collateral requirements are likely to differ between large and small firms*

Firm Size: There is evidence to show that large prime borrowers are more likely to get unsecured funding because they tend to have stronger capital base, more diversified ownership structure, more stable cash flows and more certain investment opportunities. Berger and Udell (1990) and Cowling (1999b), found a negative relationship between firm size and the incidence of loan collateralisation, since the probability of failure declines with size.

Hypothesis 4d: *Banks' collateral requirement depends on the firm's/owner's credit rating or number of delinquencies*

Firm Risk Rating: If collateral is used as an incentive against borrower default, less credit worthy borrowers will be required to offer more collateral for a given size of loan (Boot et al., 1991; Chan and Kanatas, 1985, Jimenez et al., 2006). According to Berger and Udell (1990), safer borrowers more often pledge collateral, which necessarily implies that secured loans are less risky than unsecured loans. Collateral can also be used as a signal of high credit quality in situations in which borrowers know their credit quality but lenders do not (Chan and Kanatas (1985), Besanko and Thakor, 1987a). Besanko and Thakor (1987a) show that competition for loans results in every borrower being offered a contract that maximizes its expected utility subject to the constraint that the bank breaks even. They find that collateral plays a useful role. By designing credit contracts with inversely related interest rates and collateral requirements, banks can sort borrowers into risk classes. Low risk borrowers choose contracts with low interest rates and high collateral requirements whereas high-risk borrowers choose contracts with high interest rates and low collateral requirements. However, what happens in practice is somewhat different: large firm borrowers (which are low-risk compared to SMEs) are offered low interest rates (lower than SMEs) and collateral requirements are also lower.

Collateral and Lender Characteristics

Hypothesis 4e: *Lender type, lender specialization and other differences in business model are likely to affect banks' decision on whether or not to request collateral from SMEs*

Collateralised Lending Versus Monitored Lending: The influence of lender characteristics on loan contracts determination can be explained by the approach to lending adopted, i.e. whether lending is secured or asset-backed (collateralised lending) or whether lending is information and relationship-driven (monitored lending). In collateralised lending, the borrower undertakes to relinquish ownership of a valuable asset to the lender if he or she fails to repay a loan. If the borrower defaults on the loan, the lender reserves the right to seize, sell or liquidate the asset and use the proceeds to offset the loan. Nakamura (1994) points out that ‘because the lender has recourse to the collateral, the borrower has a strong incentive to repay the loan in full’ (pp. 8). However, it should be noted that there are huge transaction costs involved with administering the sale of a collateralised property. Moreover, in some cases the value of the collateral may have diminished beyond the amount borrowed. Thus the gains to the lender might be modest (Cole et al., 2004).

In monitored lending, the lender closely monitors the financial condition of the borrower and intervenes quickly to protect its interest anytime it notices a sign that the borrower will default. The lender can threaten to refuse future loan requests or force bankruptcy (Nakamura, 1994). Effective monitoring and gathering of additional information regarding the financial condition of the borrower will help the lender mitigate the risk of default (Diamond, 1984). A major difference between collateralised lending and monitored lending is that in the former, the lender monitors the value of the collateral but is less concerned about the financial status of the borrower, whereas in monitored lending, the lender monitors the financial condition of the borrower and takes necessary actions when the risk of default is higher. Monitored lending therefore supports information disclosure and development of borrower-lender relationships.

Lender Type and Specialization: Jimenez et al. (2006) hypothesized that the use of collateral in loan contracting is a function of the type of lender. They emphasised that young and inexperienced banks with relatively lower expertise or specialization in loan contracting as well as fewer financial resources to assess the riskiness of borrowers are more likely to employ collateral as a substitute for such an evaluation. If this is the case, then it is expected that small banks will fall into this category and are likely to have incentive to demand collateral from applicants, especially those with low credit quality.

Collateral and Loan Relationships

Hypothesis 4f: *Banks' collateral requirement depends on the strength/length of bank-borrower relationships*

As noted earlier, the length of borrower-lender relationships can influence the setting of loan contract terms. Boot and Thakor (1994) show that when lenders and borrowers engage in repeated interactions through time, they are able to build trust and credibility, which help to reduce moral hazard problems. Banks that have gathered proprietary information over their clients often use this information in refining contract terms offered to borrowers. Berger and Udell (1995) in their study of the role of relationships in determining both price and non-price contract terms of bank lines of credit extended to firms find that longer bank-borrower relationships reduce the interest rates paid by borrowers and the chances that they will have to pledge collateral. According to Boot, Thakor and Udell (1991), collateral is an alternative to trust and by developing relationships, it is expected that collateral requirements would be more relaxed. Jimenez et al. (2006) also found that the likelihood of collateral is lower for loans made to borrowers with longer relationship with the lender that grants the loan. To the extent that this occurs, longer duration of banking relationships relaxes the terms of a loan, ameliorates credit constraints and hence raises firm value.

Collateral and External Factors

Hypothesis 4g: *Bank's collateral requirement also depends on external factors such as competition and the business cycle*

Competition: Besanko and Thakor (1987b) show that the competition facing firms lowers the rents of lenders and suggests that the use of collateral is more likely with competition than monopoly. Competition shortens the borrower-lender relationship and reduces the incentives to invest in the acquisition of soft information (Chan et al., 1986, Diamond, 1991; Petersen and Rajan, 1995). This could in turn increase asymmetric information and the riskiness of business loans. Accordingly, the likelihood of requesting collateral is higher with increased firm competition.

Macroeconomic Conditions: Not much is known about the effect of macroeconomic conditions such as the business cycle and monetary policy on the use of collateral. During economic downturns (i.e. reducing output growth), lenders are likely to request collateral. Similarly, in periods of tighter monetary policy or higher real interest rates, borrowers are less likely to use collateral than they are in periods of loose monetary policy (Jimenez et al., 2006). However, studies on the financial crises (e.g. Minsky, 1986) suggest that when the economy is growing, lenders tend to relax their risk assessment criteria (and demand less collateral).

6.3. Data and Methodology

6.3.1. Data collection

In order to test the research hypotheses specified in the above literature studies, the researcher conducted a questionnaire survey of Relationship Managers and Loan Officers in Nigerian Banks in May 2014. A total of 249 questionnaires were distributed to 12 Nigerian banks, out of which 121 were returned, yielding a response rate of 48.6%. The survey asked loan officers about their bank's current loan pricing decisions, the reasons for higher risk premium on SME loans as well as the collateral requirements for SME loans. The study took samples across branch types and bank categories. 65 Loan officers (or 53.7%) were drawn from commercial business branches, while 56 loan officers (or 46.3%) served in retail business branches. 47 loan officers served in Tier 1 banks (i.e. the 5 largest banks in Nigeria), while the remaining 74 loan officers came from Tier 2 banks (i.e. the smaller bank category in this sample, containing 7 mid-sized banks). (See chapter 4 for full description of the sampling techniques as well as the distribution and collection techniques).

6.3.2. Descriptive Analysis

The aim of this sub-section is to examine the trends and characteristics of the data collected on the determinants of credit terms in Nigerian banks before estimating the econometric models. In particular, this section uses simple descriptive statistics to explain the frequency of lending practices, preferences and policies of the sample banks as it relates to the determination of

interest rates and collateral on SME loans. It also uses secondary data where necessary to validate findings.

Table 6.1: SME Loan Pricing Practices

Loan Pricing Decisions for SMEs	Never		Sometimes		Often		Always	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Higher Interest Rates to SMEs than to Large Customers	32	26.4	35	28.9	24	19.8	30	24.8
Lower Interest Rates to Older Firms than to Younger Firms	33	27.3	47	38.8	27	22.3	14	11.6
Lower Rates to First Time Customers to Gain Loyalty	67	55.4	45	37.2	6	5.0	3	2.5
Lower Interest Rates to Repeat Customers	19	15.7	55	45.5	42	34.7	5	4.1
Interest Rate Smoothing	64	52.9	34	28.1	22	18.2	1	0.8
Lower Interest Rate for Firms with Existing Deposit Account	34	28.1	62	51.2	14	11.6	11	9.1
Lower Rate for Firms with Exclusive Lending Relationship	39	32.2	41	33.9	35	28.9	6	5.0
Higher Rate for Applicants that cannot Provide Collateral	61	50.4	23	19.0	25	20.7	12	9.9
Interest Rate is a Decreasing Function of Firm's Credit Rating	27	22.3	51	42.1	28	23.1	15	12.4
Interest Rate is a Decreasing Function of Owner's Credit Rating	33	27.3	56	46.3	22	18.2	10	8.3
Valid N = 121								
All percentages (%) sum up to 100% horizontally across each rating grid								

Ranking of SME Loan Pricing Practices

	Minimum		Maximum		Mean		Std Dev.	
Higher Interest Rate to SMEs than to Large Customers	1		4		2.43		1.132	
Lower Interest Rates to Repeat Customers	1		4		2.27		0.775	
Int Rate is a Decreasing Function of Firm's Credit Rating	1		4		2.26		0.945	
Lower Interest Rate to Older Firms than to Younger Firms	1		4		2.18		0.966	
Int Rate is a Decreasing Function of Owner's Credit Rating	1		4		2.07		0.887	
Lower Rate for Firms with Exclusive Lending Relationship	1		4		2.07		0.901	
Lower Interest Rate for Firms with Existing Deposit Acct	1		4		2.02		0.875	
Higher Rate for Applicants that Cannot Provide Collateral	1		4		1.90		1.052	
Interest Rate Smoothing	1		4		1.67		0.800	
Lower Rates to First Time Customers to Gain Loyalty	1		4		1.55		0.707	
Valid N = 121								

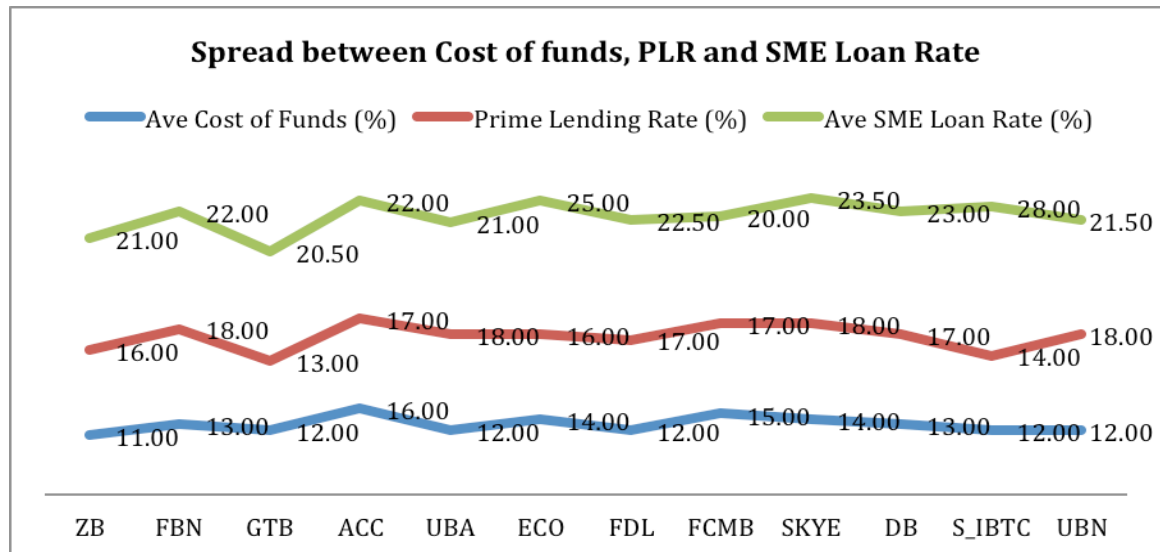
Source: Survey of Loan Officers/RMs in Nigerian Banks

The Determinants of Risk Premium in Nigerian Banks

From the survey results on loan pricing practices described in Table 6.1, loan officers rank *higher differential interest rates for SMEs than large customers* (mean 2.43, sd 1.132) as the most frequent loan pricing practice in Nigerian banks. This is reflective of the findings in many studies that smaller firms are likely to carry higher default risk than large firms and hence are likely to face higher interest rates (e.g. Harhoff and Korting, 1998, D'Auria, 1999; Lehmann and Neuberger, 2001; Behr and Gutler, 2007). To support this finding, the researcher obtained the average interest rates on SME loans versus the interest rates for blue chip corporate customers (represented by the prime lending rate) as well as the average cost of

funds⁴⁸ as at June 2014, which is usually calculated by the banks' treasury department. A cursory look at the figures across all the sample banks (see Figure 6.1) reveals a spread of between 3 and 14% between the PLR and the average SME loan rate, while the spread between the average cost of funds and the average SME loan rate is between 5 and 16%.

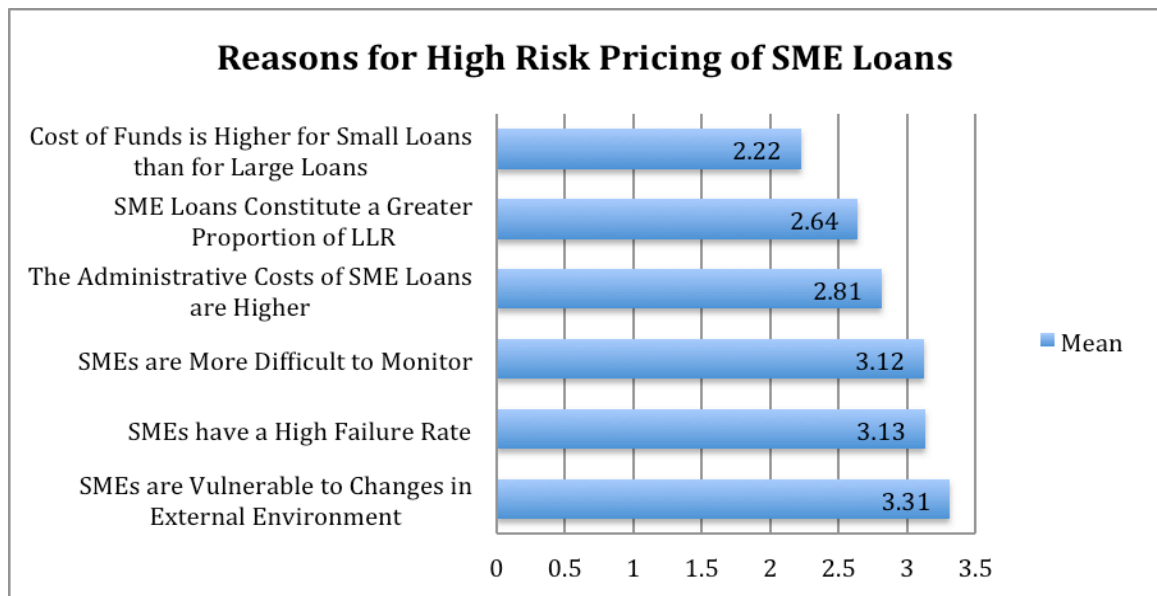
Figure 6.1: Spread Between Cost of Funds, PLR and SME Loan Rate (June 2014)



Source: Various Bank websites; Loan Officers from Sample Banks; Central Bank Money Market Rates

Banks also rated the reasons for the higher risk premium between SMEs and large customers, and the findings show that among other factors, the higher risk pricing is due to the fact that *SMEs are vulnerable to changes in the external environment*, they have a *high failure rate* and they are *more difficult to monitor* (see Figure 6.2). This is consistent with the results obtained in chapter 5 where the constraints affecting bank lending to SMEs can be attributed largely to demand-side market failures and high operational costs faced by firms doing business in Nigeria. Higher costs compared to revenues drive profits low and increase the likelihood that small firms will find it difficult to service their debts. Nigerian banks remark that their own *cost of funds* and *cost of administering loans to SMEs* play lesser role than demand-side factors in determining the loan price for SMEs.

⁴⁸ The banks' cost of funds is, in most cases, benchmarked with money market rates such as the monetary policy rate (MPR), the treasury bill rates and Nigerian inter-bank offered rate (NIBOR)

Figure 6.2: Reasons for High Risk Pricing of SME Loans

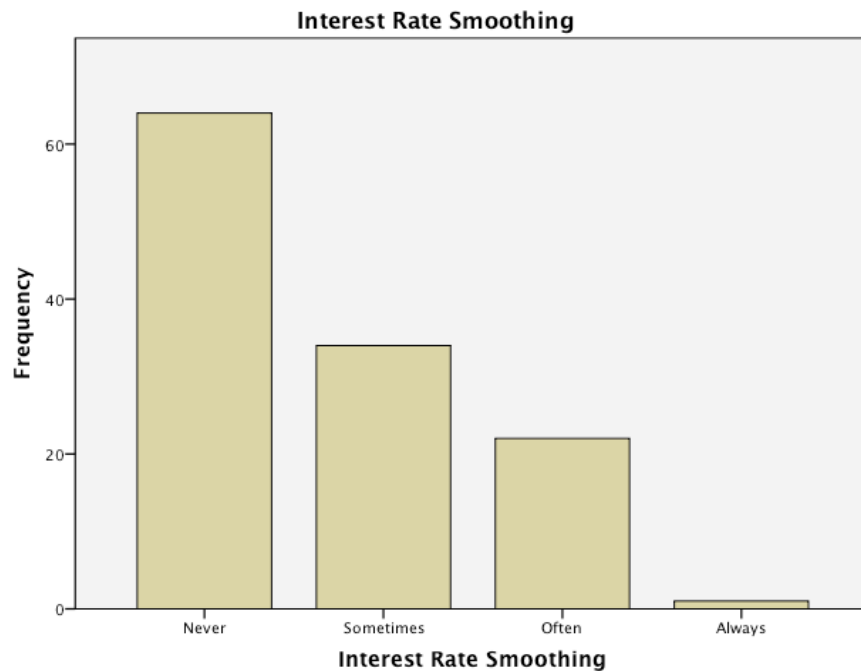
Source: Survey of Loan Officers/RMs in Nigerian Banks; SPSS Output

Another predominant loan pricing practice of Nigerian banks (Table 6.3) is that banks tend to offer *lower interest rates to repeat customers* (mean 2.27 sd 0.775) as opposed to *first time customers* (mean 1.55 sd 0.707). This means that firms with longer relationship with their bank tend to enjoy reduced rates. Similarly, Nigerian bankers offer *lower interest rates to older firms than young customers* (mean 2.18, sd 0.966). These results are consistent with credit rationing theories that show that with a given creditworthiness, relatively young firms seeking external finance are likely to be more credit constrained than a pool of established firms (Stiglitz and Weiss, 1981; Diamond, 1989). External finance problems are most severe with young firms or new borrowers (i.e. start-ups) since they have a short track record of borrowing and hence are likely to be more risky than existing borrowers.

On the tradeoff between availability of collateral and interest rates, some loan officers point out that customers with adequate security usually get lower interest rates. However, more than 50% of the loan officers in the sample banks admit that they do not charge a higher interest rate for SME loan applicants that cannot meet the bank's collateral requirement. This is perhaps due to the fact that most SMEs in Nigeria can hardly afford fixed asset collateral, so that the banks either decide not to lend to them due to their perceived riskiness or base its interest rates on a fixed charge for these category of borrowers (depending on the size of the loan or firm sector). In fact, some of the loan officers say that their bank's interest rate is fixed

for all SME customers except where concession is given on a special request, perhaps on the grounds of established relationship or good credit reputation.

Figure 6.3: Interest Rate Smoothing in Nigerian Banks



There appears not be much evidence in support of *interest rate smoothing* (mean 1.67, sd 0.800) in Nigerian banks given that only 46% of loan officers report its occurrence. 53% of loan officers say that their bank “never” charges young firms lower rates at the beginning of their business relationship with the hope of making higher returns in later years when their business has become more established. Only 46% however, say that their bank “sometimes” or “often” practice interest rate smoothing in this manner (see Figure 6.3). Thus, there is no overwhelming evidence to support the results of studies like Sharpe (1990), Petersen and Rajan (1994, 1995), Berger and Udell (1995), and Berlin and Mester (1998), which found that banks sacrifice short-term gains for long-term gains when they offer subsidized credit to growing enterprises. One reason for this difference is that Nigerian banks often lend on short-term basis and are very short-termist in their profit-drive given the high failure rate of SMEs and the unstable macroeconomic conditions under which they operate. Thus banks must balance the need to satisfy customers’ financial requirements with the need to generate adequate yields for their shareholders and investors.

Other determinants of loan pricing practices mentioned by the loan officers include credit turnover (amount of credit disbursed to different customer segments) and credit structure within the bank (i.e. classification of borrowers by size, business turnover, etc), historical trend, market trends, type of sector being financed and the availability of funds. Most banks in Nigeria offer lower interest rates to firms in the agricultural sector as a way of boosting output and employment in this preferred sector. For example, UBA offers lending rates as low as 7% to prime customers in the agricultural sector, while other sectors such as Mining and Quarrying, Oil and Gas and Real Estate and Construction get floor rates as high as 20%, 16.5% and 20% respectively⁴⁹.

The Determinants of Loan Collateral in Nigerian Banks

Use of Collateral: Loan contracts often require borrowers to pledge collateral as a way of providing security for the debt. From the survey findings, 84 (or about 70%) of the loan officers surveyed admit that their bank “often” or “always” request collateral before making loans to SMEs (see Table 6.2 and figure 6.4). In a similar study by Beck et al. (2008b) on SME financing around the world, they found that at least three quarters of banks require collateral to make business loans. Furthermore, they found that because of the weaker informational and institutional environment in developing countries, a slightly higher percentage of banks require collateral to make business loans in these countries relative to countries with developed credit markets.

Amount of Collateral: As noted earlier, collateral amount is essentially a function of the loan size. 88 (or 72.7%) of the loan officers said their bank’s collateral requirements “often” or “always” amount to 100% of the loan size (see figure 6.5). In some banks, full collateralisation is up to 120-150% of the loan size. The reason offered by some loan officers is that the excess value is due to the need to discount for inflation over the duration of the loan or to adjust for changes in the business cycle, which could affect the value of the pledged asset. Some loan officers say the amount of collateral also depends on its ease of liquidation. These findings are consistent with those of Jimenez et al. (2006) who found that the likelihood of covering 100% of the face value of a loan is dependent on the loan size, real interest rates and the duration of the loan.

⁴⁹ <https://www.ubagroup.com/countries/ng/rates> (accessed 26/09/2014)

Figure 6.4: Use of Collateral

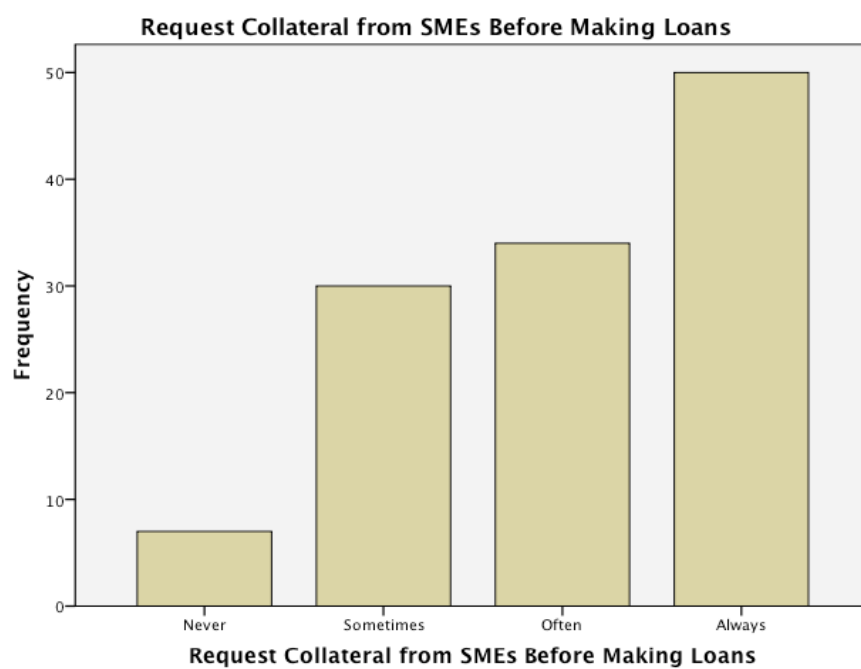


Figure 6.5: Amount of Collateral

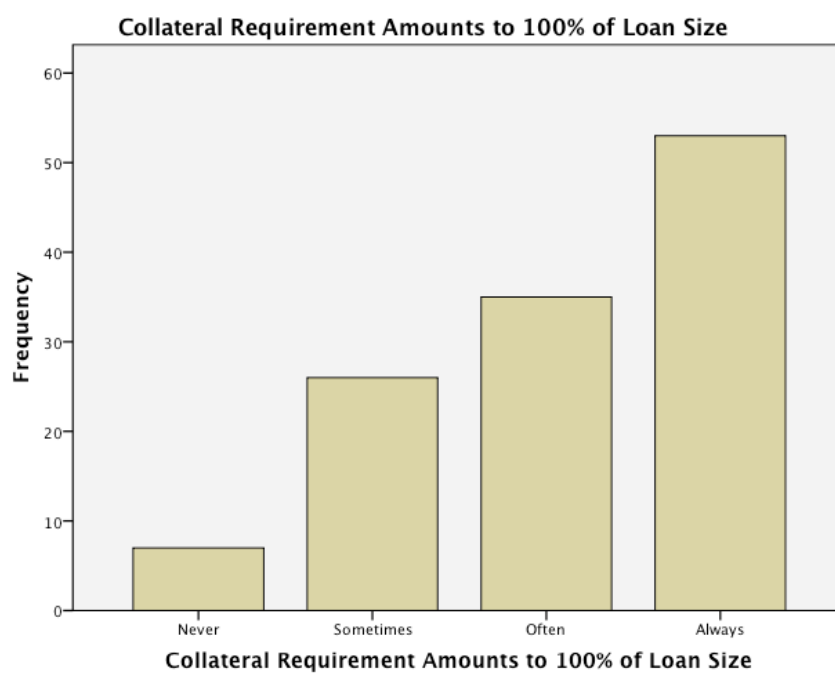


Table 6.2: SME Loan Collateral Practices

Collateral Requirements for SME Loans	Never		Sometimes		Often		Always	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Request Collateral from SMEs Before Making Loans	7	5.8	30	24.8	34	28.1	50	41.3
Collateral Requirement Amounts to 100% of Loan Size	7	5.8	26	21.5	35	28.9	53	43.8
Collateral Requirement Differ Between Large and Small Firms	16	13.2	15	12.4	57	47.1	33	27.3
Collateral for New Customers is Different from Existing Ones	36	29.8	28	23.1	44	36.4	13	10.7
Collateral Depends on the Riskiness of Project Being Financed	7	5.8	21	17.4	56	46.3	37	30.6
Collateral Depends on Firm's Credit Rating	12	9.9	29	24	36	29.8	44	36.4
Collateral Depends on Owner's Credit Rating	17	14	41	33.9	38	31.4	25	20.7
Collateral Depends on Length of Bank-Firm Relationship	29	24	43	35.5	33	27.3	16	13.2
Collateral Depends on Loan Size, Regardless of Firm Size	11	9.1	20	16.5	47	38.8	43	35.5
Collateral Depends on Strength of Competition for SME Loans	26	21.5	50	41.3	34	28.1	11	9.1
Collateral Depends on Business Cycle or Macro Factors	12	9.9	40	33.1	42	34.7	27	22.3
Valid N = 121								
All percentages (%) sum up to 100% horizontally across each rating grid								

Ranking of SME Loan Collateral Practices

	Minimum		Maximum		Mean		Std Dev.	
Collateral Requirement Amounts to 100% of Loan Size	1		4		3.11		0.938	
Request Collateral from SMEs Before Making Loans	1		4		3.05		0.947	
Collateral Depends on Riskiness of Project Being Financed	1		4		3.02		0.846	
Collateral Depends on Loan Size, Regardless of Firm Size	1		4		3.01		0.944	
Collateral Depends on Firms Credit Rating	1		4		2.93		1.001	
Collateral Requirement Differs Btw Large and Small Firms	1		4		2.88		0.959	
Collateral Depends on the Business Cycle or Macro Factors	1		4		2.69		0.930	
Collateral Depends on Owners' Credit Rating	1		4		2.59		0.972	
Collateral Depends on Length of Bank-Firm Relationship	1		4		2.30		0.980	
Collateral for New Customers Different from Existing Ones	1		4		2.28		1.010	
Collateral Depends on Strength of Competition for SME Loans	1		4		2.25		0.897	
Valid N = 121								

Source: Survey of Loan Officers/RMs in Nigerian Banks; SPSS Output

Other firm characteristics factors that determine the use or amount of collateral include: the *riskiness of the project being financed* (mean 3.02, sd 0.846), the *firm's credit rating* (mean 2.93 sd 1.001), and the *firm size* (mean 2.88 sd 0.959). Accordingly, the key determinants of collateral in Nigeria are driven essentially by loan and borrower risk characteristics. The literature shows that observably risky borrowers are required to pledge collateral, while observably safe borrowers are not (Berger and Udell, 1990). Smaller and younger firms as well as borrowers with relatively low credit rating are likely to be asked to pledge collateral (Chan and Kanatas, 1985; Berger and Udell, 1990; Cowling, 1999b; Jimenez et al., 2006)

Types of Collateral Accepted: Loans may be secured on a wide range of assets such as real estate, equipment, motor vehicles, account receivables, financial instruments, or business stock. From Table 6.3 and Figure 6.6, it can be observed that real estate is the most frequently accepted type of collateral for SME lending. More than 90% of the respondents confirm that real estate is the “most accepted” form of security in Nigerian banks. Cash and other liquid

assets are the second most important (as 71% of the loan officers rate this form of collateral as “most accepted”) followed by bank and personal guarantees (38%). As shown in chapter 7, some banks offer cash-backed loans to businesses where the principal owner also has an equivalent fixed deposit amount domiciled within the bank. The least accepted forms of collateral are goods in stock (13.2%), vehicles and business equipment (10.7%) and household goods (3.3%). Though movable assets constitute the majority of the capital stock of businesses in Nigeria especially for the MSMEs, they are not often accepted as marketable collateral.

Table 6.3: Types of Collateral Accepted

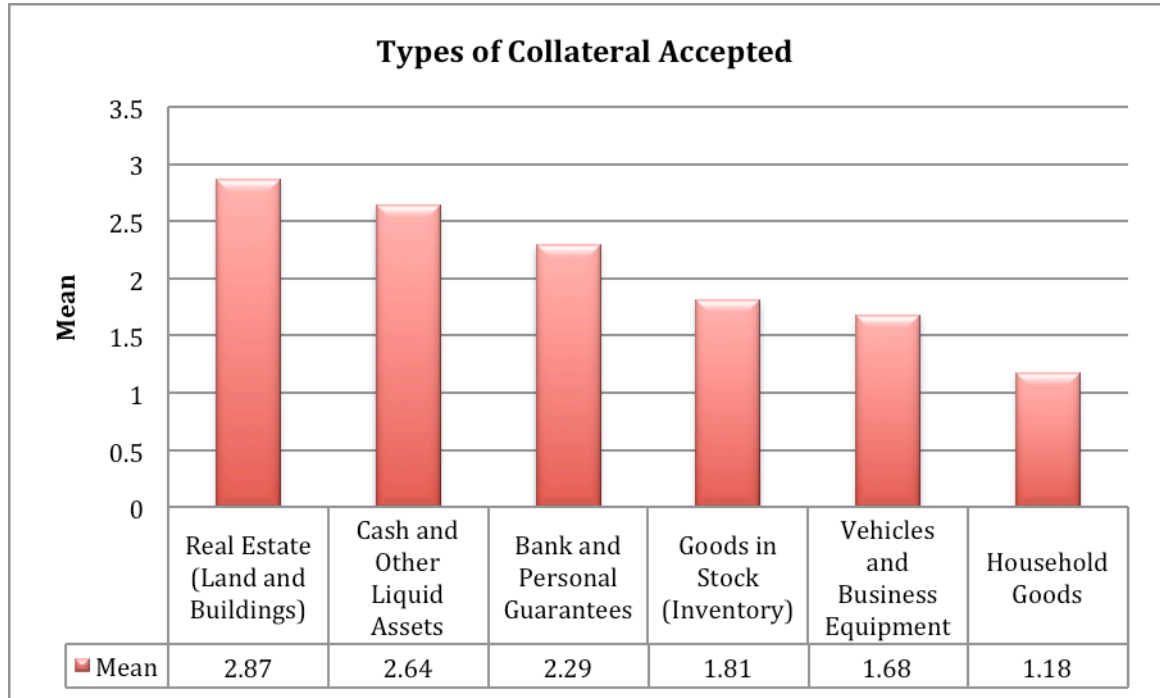
Types of Collateral Accepted	Degree of Acceptance					
	Least Accepted		Accepted		Most Accepted	
	Freq	(%)	Freq	(%)	Freq	(%)
Real Estate (Land and Buildings)	4	3.3	8	6.6	109	90.1
Cash and Other Liquid Assets	9	7.4	26	21.5	86	71.1
Bank and Personal Guarantees	11	9.1	64	52.9	46	38
Vehicles and Business Equipment	52	43	56	46.3	13	10.7
Goods in Stock (Inventory)	39	32.2	66	54.5	16	13.2
Household Goods	103	85.1	14	11.6	4	3.3
Valid N = 121						
All percentages (%) sum up to 100% horizontally across each rating grid						

Source: Survey of Loan Officers/RMs in Nigerian Banks

Comparing the practice of loan collateralisation in developed and developing countries, some studies show mixed evidence. For instance, Fleisig (1996) found that, while in developed countries with advanced credit systems, movable property such as account receivables and goods in stock is widely used, in developing countries such as in Sub-Saharan Africa, Asia, Latin America and Eastern Europe, fixed assets like real estate is preferred against movable collateral. According to Fleisig (1996), movable assets are not very much accepted as collateral in developing countries due to three main barriers: (1) the difficulty, uncertainty and high cost in creating security interest; (2) flaws in the registration and verification of security interests; and (3) the slow and expensive process of enforcing security interest, i.e. repossession and sale of collateral. However, more than a decade later, Beck et al. (2008b) have found that real estate is more frequently ranked as the most important collateral type by banks in developed countries relative to those in developing countries. For instance, the study shows that almost 56% of banks in developed countries indicate that real estate is the most

important type of collateral for SME lending compared to 37% of banks in developing countries.

Figure 6.6: Types of Collateral Accepted



Source: Survey of Loan Officers/RMs in Nigerian Banks; SPSS Output

Though real estate has gained universal acceptance as an important loan collateral instrument, there are some important impediments to its usage. In a study on the drivers of and obstacles to the use of real estate as loan collateral in Nigerian banks, Nwuba et al. (2013) found that there are certain key requirements for a piece of real estate to be used as collateral. These are: (1) the borrower's possession of a valid and verifiable title; (2) the title should be one of those acceptable to the bank (e.g. certificate of statutory right of occupancy granted by the State Governor); and (3) the real estate is marketable in the sense that it can be easily liquidated. According to their study, banks also consider the professional valuation of collateral assets as an important aspect of the lending process.

6.3.3. Econometric Model

To empirically examine the determinants of risk premium and collateral, the study uses the ordinal logistic regression (OLR) method. As noted in chapter 4, OLR is a conditional likelihood procedure that estimates the probability of observing a given event conditional on a particular set of parameters. The OLR model is a statistical technique with an ordered dependent variable. Full details on fitting an OLR model has earlier been provided in chapter 4 (the methodology chapter). In interpreting OLR estimates, the sign of parameters shows whether the latent variable y^* increases with the regressor. A positive coefficient indicates an increased chance or likelihood that a subject with a higher score on the independent variable will be observed in a higher category. A negative coefficient indicates the chances or likelihood that a subject with a higher score on the independent variable will be observed in a lower category (Snedker et al., 2002). So for example, if we are interested in testing whether the risk premium on an SME loan depends on whether a firm has collateral or not, a positive coefficient will imply that a firm with no collateral to secure the loan is more likely to be charged a higher risk premium, while a negative coefficient will mean that there is a lower likelihood of a higher risk premium with available collateral. In addition to the fixed effects OLR, we can also estimate the ordered logit marginal effects as shown in chapter 4. To interpret the marginal effects, we say that each unit increase in the independent variable increases/decreases the probability of selecting alternative j by the marginal effect expressed as a percentage (Katchova, 2013).

Definition of Variables

The various determinant factors explaining the risk premium and collateral requirements on SME loans in Nigerian banks, which are used in the regression analysis, are explained in Table 6.4 and 6.5. They derive from influential studies on the determinants of risk premium on SME loans and the determinants of collateral (e.g. Petersen and Rajan, 1994; Berger and Udell, 1995; Harhoff and Korting, 1998; Lehmann and Neuberger, 2001; Jimenez et al., 2006; St-Pierre and Bahri, 2011) as examined in section 6.2. This chapter utilises 34 variables from the questionnaire in the current study of loan contracts determination, including 20 core variables, 12 bank dummies, 1 bank size dummy and 1 branch type dummy. However, no more than 25 variables were used in any one single regression.

Table 6.4: Model 1: Determinants of Risk Premium on SME Loans

<i>RISK_PREMIUM</i> = <i>f</i> (Borrower's Risk Characteristics, Lender Characteristics, Relationship Variables, Control Variables)	
Variable	Measure
Dependent Variable	
<i>RISK_PREMIUM</i>	This variable represents the frequency of higher differential interest rates between large (prime) customers and SME customers. Categorical variables were derived from (=1) never to (=4) always.
Borrower's Risk Characteristics	
<i>FIRM_AGE</i>	This variable represents the extent to which older and more established firms are charged lower rates than younger firms. We expect that older and more established firms will attract reduced risk premium on SME loans.
<i>PLEDGE_COLLATERAL</i>	This variable represents the extent to which SME loan applicants who cannot meet the bank's collateral requirements are charged higher interest rates. Thus, we expect a positive relationship between absence of collateral and the likelihood of a higher risk premium.
<i>FIRM_RATING</i>	This variable represents the extent to which interest rate charged is a decreasing function of the applicant's firm's credit rating. We expect higher firm rating to reduce the likelihood of a higher risk premium.
<i>RISK_ENVIRONMENT</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which risk premium depends on the risk the bank takes due to the vulnerability of SMEs to changes in the external environment. Thus, we expect a positive relationship.
Lender Characteristics	
<i>COST_OF_FUNDS</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which risk premium depends on the cost of funds for small loans viz-a-viz large loans. We expect a positive relationship between cost of funds and risk premium.
<i>ADMIN_COSTS</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which risk premium depends on the administrative costs of SME loans. We expect a positive relationship between administration costs and risk premium.
Relationship Variable(s)	
<i>INTEREST_SMOOTHING</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which the bank charges young firms lower interest rates at the beginning of their relationship with the bank with the hope of making higher returns in later years when their business has become more established. We expect interest rate smoothing to reduce the risk premium on SME loans in line with studies by Sharpe (1990), Petersen and Rajan (1994, 1995), and Berger and Udell (1995).
Control Variables	
<i>BANK_ID</i>	This dummy variable captures the differences between banking groups. It is a series of code numbers generated for each participating bank to measure the idiosyncratic features of each bank on the differences in the risk pricing of SME loans.
<i>BANK_SIZE</i>	This variable divides the sample into 2 parts, where the variable takes on the value 2 where the loan officer works in a tier-1 bank (representing the top 5 largest banks), and 1 if the loan officer works in a tier-2 bank (representing other mid-sized banks in the sample). Cowling (1999) points out that the size of loan issuing bank could have an effect on the loan risk premium. Larger banks are expected to charge higher risk premium than smaller banks.
<i>BRANCH_TYPE</i>	This dummy variable is the code number given to loan officers depending on whether they serve in retail or commercial branches (Dummy '1' is for LOs in retail branches; Dummy '2' is for LOs in commercial branches). This categorical variable could also proxy for the influence of geographical location or distance on soft information acquisition (Keeton, 1995). Suffice to say that retail branches and commercial branches are clustered together in different geographical locations, the former in less developed areas and the former in more developed urban areas.

Table 6.5: Model 2: Determinants of Loan Collateral for SMEs

Model 2 (a) Use of Collateral:	
$REQUEST_COLLATERAL = f(\text{Loan Risk, Borrower's Risk Characteristics, Relationship Variables, External Factors, Control Variables})$	
Model 2 (b) Amount of Collateral:	
$FULL_COLLATERAL = f(\text{Use of Collateral, Loan Size, Borrower's Risk Characteristics, Control Variables})$	
Variable	Measure
Dependent Variable (s)	
<i>REQUEST_COLLATERAL</i>	This variable represents the frequency at which a bank requests collateral from SME customers before making loans. Categorical variables were derived from (=1) never to (=4) always.
<i>FULL_COLLATERAL</i>	This variable represents the frequency at which a bank's collateral requirement amounts to 100% of loan size. Categorical variables were derived from (=1) never to (=4) always.
Loan Risk Characteristics	
<i>LOAN_SIZE</i>	This variable represents the extent to which a bank's collateral requirement depends on loan size, regardless of whether the firm is large or small. We expect a positive relationship between loan size and the probability of requesting collateral from SMEs as it indicates a lender's relative increase in credit risk (Jimenez <i>et al.</i> , 2006).
<i>PROJ_RISKINESS</i>	This variable represents the frequency at which a bank's collateral requirements depend on the riskiness of the project being financed. We expect a positive relationship between project riskiness and the incidence of loan collateralisation.
<i>LOAN_DIVERSION</i>	This variable represents the loan officers' evaluation of their bank in terms of how significant the incidence of loan diversion can impact on the riskiness of SME loans and hence on the pricing of SME loans. The higher the risk of loan diversion, the higher the probability of requesting collateral. The risk of loan diversion is rated highest among loan officers in Nigerian banks - see chapter 5).
Borrower's Risk Characteristics	
<i>COLL_FIRM_SIZE</i>	This variable represents the extent to which a bank's collateral requirements differ between large and small firms. In line with Berger and Udell (1990) and Cowling (1999b), we expect a negative relationship between firm size and the incidence of loan collateralisation, as the probability of failure declines with size.
<i>COLL_FIRM_AGE</i>	This variable represents the extent to which a bank's collateral requirements depend on the bank's valuation of the importance of a firm's age in taking lending decisions. Older, more established and diversified firms will usually not be required to pledge collateral.
<i>COLL_FIRM_RATING</i>	This variable represents the extent to which a bank's collateral requirements depend on the applicant firm's credit rating or number of delinquencies. We expect a negative relationship between firm's credit rating and the likelihood of requesting collateral from SMEs.
Relationship Variables	
<i>CUSTOMER_TYPE</i>	This variable represents the extent to which a bank's collateral requirements depend on whether the loan applicant is a new customer/start-up or an existing borrower. New customers will tend to have a higher likelihood of pledging collateral as against existing customers (Berger and Udell, 1995).
<i>RELN_LENGTH</i>	This variable represents the extent to which a bank's collateral requirements depend on the length (strength) of borrower-bank relationship. In line with findings from Berger and Udell (1995), we expect longer bank-borrower relationships to reduce the likelihood of requesting collateral.
<i>EXCLUSIVITY</i>	This variable represents the extent to which a bank's collateral requirements depend on the strength of competition for SME loans. Here competition is measured by the exclusivity of relationship between borrowers and lenders. More exclusive lending relationships should reduce the riskiness of business loans and hence reduce the likelihood of requesting collateral. Hence we expect a negative relationship between exclusivity and the likelihood of requesting collateral.
External Factor(s)	
<i>BUS_CYCLE</i>	This variable represents the extent to which a bank's collateral requirements depend on the business cycle or macroeconomic conditions. Poorer macroeconomic conditions increase the likelihood of requesting collateral since they increase the riskiness of loans.
Control Variables	
<i>BANK_ID</i>	As previously defined
<i>BANK_SIZE</i>	As previously defined
<i>BRANCH_TYPE</i>	As previously defined

6.4. Empirical Results:

6.4.1 Empirical Determination of Risk Premium on SME Loans

Table 6.6 shows the ordinal logistic regression (OLR) estimation results for the determination of risk premium on SME loans. The dependent variable is '*RISK_PREMIUM*', which measures the frequency at which Nigerian banks charge higher differential interest rates between large (prime) customers and SME customers. The main independent variables of interest are firm risk characteristics, lender characteristics and relationship variables already described in Table 6.4. The results show that *FIRM_AGE* is significantly related to the likelihood of higher differential interest rates between SME customers and large firms, thus confirming hypothesis that banks are likely to charge higher interest rates to younger and informationally opaque SMEs and lower rates to older and more established large firms. The result also underscores the finding from the descriptive analysis that Nigerian banks offer lower interest rates to older and more successful firms and tend to charge younger firms higher rates due to their relative opacity. As noted in chapter 5, the information gap between SMEs and Nigerian banks is huge. SMEs in Nigeria have poor accounting practices and do not provide detailed financial information such as proper financial statements when seeking bank loans (Ukoha, 2013a). Moreover, the acuteness of information asymmetry between banks and SMEs leads to inaccurate risk assessments with risks often being overstated by banks. The overestimation of risks, coupled with high operating costs on SME loans, prompts banks to avoid lending to SMEs or offer rates that are excessively high (Lefilleur, 2009).

Notice that *PLEDGE_COLLATERAL*, which measures hypothesis that *banks* are likely to charge higher interest rates for SME loan applicants that cannot meet the bank's collateral requirements, is insignificant, supporting the findings from the descriptive statistics that Nigerian banks do not charge a higher interest rate for SME loan applicants that cannot meet with the bank's collateral requirement. Again, a reasonable explanation for this is that SMEs in Nigeria can hardly afford fixed asset collateral and banks either decide not to lend to them due to their perceived likelihood of default or charge the few credit worthy borrowers among them fixed rates, irrespective of whether they possess collateral or not.

Table 6.6: Model 1: Regression Results - Determinants of Risk Premium on SME Loans

Ordered Logistic Regression: RISK_PREMIUM Number of Observations = 121 LR χ^2 (19 degrees of freedom) = 59.67 Prob > χ^2 = 0.0000 Pseudo R-Squared = 0.1790 Log likelihood = -136.8055				
Type of Variable	Variable Name	Coefficient	Std. Error	Prob.
	INTERCEPT 1	1.937	2.362	= =
	INTERCEPT 2	3.736	2.370	= =
	INTERCEPT 3	5.029	2.378	= =
Borrower's Risk Characteristics	FIRM AGE	0.532**	0.232	0.022
	PLEDGE COLLATERAL	0.200	0.213	0.346
	FIRM RATING	0.186	0.235	0.427
	RISK ENVIRONMENT	0.884***	0.323	0.006
Lender Characteristics	COST OF FUNDS	0.353	0.225	0.116
	ADMIN COSTS	0.316	0.284	0.265
Relationship Variable	INTEREST SMOOTHING	-0.741***	0.270	0.006
Control Variables/ Dummies	BANK SIZE	-0.755	0.981	0.592
	BRANCH TYPE	0.041	0.475	0.931
	BANK_DUMMY1	-0.909	0.938	0.333
	BANK_DUMMY2	-0.239	1.012	0.814
	BANK_DUMMY3	0.744	1.012	0.462
	BANK_DUMMY4	-1.094	0.972	1.266
	BANK_DUMMY5	(NA)	(NA)	(NA)
	BANK_DUMMY6	0.143	0.924	0.877
	BANK_DUMMY7	0.562	0.939	0.550
	BANK_DUMMY8	0.840	0.890	0.345
	BANK_DUMMY9	-0.483	0.953	0.612
	BANK_DUMMY10	-0.452	1.052	0.667
	BANK_DUMMY11	-0.901	0.963	0.350
	BANK_DUMMY12	(NA)	(NA)	(NA)
(Risk Premium) = f (Borrower's Risk Characteristics, Lender Characteristics, Relationship Variables, Controls/Dummies). This table shows the OLR estimation results for the determination of risk premium on SME loans. The dependent variable is 'risk_premium', which measures the frequency of higher differential interest rates between large (prime) customers and SME customers - [categorical: from (=1) never to (=4) always]. The main independent variables are firm risk characteristics, lender characteristics and relationship variables already described in Table 6.4. The entry "(NA)" means the variable is omitted because of collinearity * means that the coefficient is statistically significant at a 10% level ** means that the coefficient is statistically significant at a 5% level *** means that the coefficient is statistically significant at a 1% level				

However, the impact of *RISK_ENVIRONMENT* on the likelihood of higher risk premium on SME loans is very significant (at the 1% level). This variable (i.e. the notion that lending to SMEs is riskier because they are more vulnerable to changes in the external environment) was rated the most important reason for higher risk premium on SME loans in Nigeria (see figure 6.2). Supporting this finding, Ayyagari et al. (2008) found evidence on the importance of the business environment as a financing and growth constraint. In particular, they find that inefficient functioning of financial markets, inadequate security, and enforcement of property rights, poor provision of infrastructure, inefficient regulation and taxation, corruption, and governance issues such as political and macroeconomic instability constrain the financing and

performance of SMEs in low- and middle-income countries including Nigeria. When they specifically look at the severity of financing obstacles to growth, they found that high interest rates represent the only financial obstacle directly constraining firm growth.

On the relative impact of lender-specific factors on the likelihood of higher risk premiums, the results show that *COST_OF_FUNDS* and *ADMIN_COSTS* are both not significant, pointing to the fact that supply-side factors may not be responsible for higher interest rate charges on SME loans in Nigeria. This refutes hypothesis that banks are likely to charge higher risk premiums on SME loans because of higher cost of funds, cost of risk and costs of loan administration, but corroborates the findings from the descriptive analysis where three lender factors ranked lower than three borrower factors in terms of relative influence in the setting of differential rates between large customers and SMEs (see figure 6.2). Surprisingly, *INTEREST_SMOOTHING* is negatively and significantly related (at the 1% level) to the likelihood of lower risk premiums. Although this result is not fully reflective of evidence from the descriptive analysis, it does show some consistency with findings from notable studies (e.g. Sharpe, 1990; Petersen and Rajan, 1994, 1995; Berger and Udell, 1995, etc) and hence confirms the hypothesis that banks are likely to charge younger firms lower interest rates at the beginning of their banking relationship with the hope of making higher returns in later years when their business has become established. The negative sign implies that the more banks offer subsidized rates to growing enterprises, with the hope of making long term gains in the future, the lower the likelihood of a higher risk premium on loans to SMEs relative to larger enterprises. This result might also be indicative of the fact that some banks may want to offer lower interest rates to customers they think have the potential of generating value-enhancing repeat business for the bank in the future such as time deposits, additional lending business and other fee-based financial services for fear of losing such customers to competitors. This is particularly the case in Nigeria because of the emphasis on aggressive marketing of customers by loan officers and the prevalence of sales targets in most banks.

None of the dummy variables, including *BANK_SIZE* and *BRANCH_TYPE* were statistically significant, implying that interest rates on SME loans are not statistically different across banks. In addition, Nigerian banks tend to fix interest rates for SMEs within a band that includes the risk premium above the prime-lending rate regardless of whether their SME customers are domiciled in retail or commercial branches. This suggests that loan contract

decisions are driven mainly by the credit quality of each borrower and the banks' general lending policies towards SMEs.

6.4.2 Empirical Determination of Loan Collateral

Column (A) of Table 6.7 shows the OLR estimation results for the determination of the use of collateral. The dependent variable is '*REQUEST_COLLATERAL*', which measures the frequency with which a bank requests collateral from SME customers before making loans. The main independent variables are loan risk, borrower's risk characteristics, and relationship variables, already described in Table 6.5. From column (A), the factors that affect the likelihood of a bank requesting collateral from SMEs in Nigeria are significantly connected with *LOAN_DIVERSION*, *COLL_FIRM_SIZE*, and *COLL_FIRM_AGE*, which measure the risk of loan default, the risk of failure and the opacity of SME borrowers, respectively. The new variable of interest introduced into the model to capture the risk of default on SME loans, *LOAN_DIVERSION*, shows a significant and positive effect on the use of collateral (at the 5% level). This supports the hypothesis that bank's collateral requirement depends on the risk of loan default, thus suggesting that the incidence of loan diversion increases the chances of banks requesting collateral from SMEs because it reduces the likelihood of repayment of loans granted by banks.

COLL_FIRM_SIZE has a positive and significant effect on the likelihood of pledging collateral at the 10% level. This result is consistent with theories that advocate that banks require collateral from borrowers that are perceived to be riskier, i.e. the "lender selection" effect (Berger, et al. (2011), as the probability of default declines with firm size. Thus, the results confirm the hypothesis that banks' collateral requirements are likely to differ between large and small firms. In line with Cowling (1999b), the age of firm, *COLL_FIRM_AGE*, exerts a significant and negative effect upon the incidence of loan collateralisation, supporting the theory that older and more established firms will usually not be required to pledge collateral, while younger firms are likely to be required to pledge collateral because they have a lower probability of survival and hence carry higher risk of default.

Table 6.7: Model 2: Regression Results - Determinants of Collateral

Ordinal Logistic Regression (OLR): Determinants of Collateral							
(a) Use of Collateral							
(b) Amount of Collateral							
		(A) REQUEST_COLLATERAL Number of Observations =121 LR χ^2 (22 df) = 55.50 Prob > χ^2 = 0.0000 Pseudo R-Squared = 0.1860 Log likelihood = -121.386			(B) FULL_COLLATERAL Number of Observations =121 LR χ^2 (16 df) = 64.68 Prob > χ^2 = 0.0000 Pseudo R-Squared = 0.2200 Log likelihood = -114.061		
Type of Variable	Variable Name	Coefficient	Std. Error	Prob	Coefficient	Std. Error	Prob
	INTERCEPT_1	-1.792	2.017	==	0.307	1.350	==
	INTERCEPT_2	0.694	1.997	==	2.820	1.352	==
	INTERCEPT_3	2.370	2.016	==	4.719	1.402	==
	INTERCEPT_4						
Loan Risk Characteristics	REQUEST_COLLATERAL	==	==	==	1.614***	0.283	0.000
	LOAN_SIZE	0.131	0.244	0.592	0.894***	0.246	0.000
	PROJ_RISKINESS	0.346	0.273	0.205	==	==	==
	LOAN_DIVERSION	0.883**	0.385	0.022	==	==	==
Borrowers' Risk Characteristics	COLL_FIRM_SIZE	0.505*	0.296	0.088	-0.446*	0.253	0.078
	COLL_FIRM_AGE	-0.671**	0.322	0.037	==	==	==
	COLL_FIRM_RATING	-0.253	0.235	0.281	-0.455**	0.226	0.044
Relationship Strength	CUSTOMER_TYPE	-0.201	0.240	0.403	==	==	==
	RELN_LENGTH	0.036	0.237	0.880	==	==	==
	EXCLUSIVITY	0.116	0.211	0.583	==	==	==
External Factors	BUS_CYCLE	-0.105	0.242	0.663	==	==	==
Controls	BANK_SIZE	-0.158	2.259	0.628	-0.560	1.099	0.610
	BRANCH_TYPE	0.281	0.524	0.593	0.877*	0.504	0.082
	BANK_DUMMY1	-0.659	0.895	0.461	0.150	1.168	0.898
	BANK_DUMMY2	-1.991*	1.119	0.075	0.352	1.376	0.798
	BANK_DUMMY3	0.241	0.958	0.801	0.443	1.110	0.690
	BANK_DUMMY4	-0.083	0.924	0.928	-0.516	1.190	0.664
	BANK_DUMMY5	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	BANK_DUMMY6	0.286	0.979	0.770	1.646	1.002	0.101
	BANK_DUMMY7	-2.392***	0.945	0.011	1.056	0.945	0.264
	BANK_DUMMY8	-1.183	0.965	0.220	1.543*	0.926	0.096
	BANK_DUMMY9	1.588	1.010	0.116	0.659	1.017	0.517
	BANK_DUMMY10	-2.131**	1.058	0.044	0.407	1.118	0.716
	BANK_DUMMY11	-2.719***	0.956	0.004	0.207	1.033	0.841
	BANK_DUMMY12	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
<p>(a) Use of Collateral = f(Loan Risk, Borrower's Risk Characteristics, Relationship Variables, External Factors, Controls)</p> <p>(b) Amount of Collateral = f(Use of Collateral, Loan Size, Borrower's Risk Characteristics, Control Variables)</p> <p>Column (A) of this table shows the OLR estimation results for the determination of the use of collateral. The dependent variable is 'REQUEST_COLLATERAL', which measures the frequency at which a bank requests collateral from SME customers before making loans [categorical: from (=1) never to (=4) always]. The main independent variables are loan risk, borrower's risk characteristics, and relationship variables, already described in Table 6.5.</p> <p>Column (B) shows the OLR estimation results for the determination of the amount of collateral. The dependent variable is 'FULL_COLLATERAL', which measures the frequency at which a bank's collateral requirement amounts to 100% of loan size [categorical: from (=1) never to (=4) always]. The main independent variables are use of collateral, loan size, and borrower's risk characteristics, already described in Table 6.5.</p> <p>The entry "(NA)" means the variable is omitted because of collinearity</p> <p>* means that the coefficient is statistically significant at a 10% level</p> <p>** means that the coefficient is statistically significant at a 5% level</p> <p>*** means that the coefficient is statistically significant at a 1% level</p>							

Against findings by Berger and Udell (1995), Cowling (1999b), and Jimenez (2006) the relationship variables, *CUSTOMER_TYPE*, *RELN_LENGTH*, and *EXCLUSIVITY*, do not exert any significant effect on the probability of requesting collateral. This implies that relationships

play a lesser role in refining the collateral terms offered on bank lines of credit extended to firms. Thus empirical evidence refutes the hypothesis that banks' collateral requirement depends on the strength/length of bank-borrower relationships.

However, the hypothesis that lender type, lender specialization and other differences in business model are likely to affect banks' decision on whether or not to request collateral from SMEs is upheld as the negative signs and relative significance of *BANK_DUMMY2*, *BANK_DUMMY7*, *BANK_DUMMY10* and *BANK_DUMMY11*, are pointers to the fact that the type of lender or differences in business model of banks makes it less likely that these banks will request collateral from their SME customers. This may be a reflection of the fact that some of these banks have introduced non-collateral loans for SMEs and thus have other ways of assessing borrower's riskiness (e.g. by using credit scoring, psychometric scoring, trade credit or other lending technologies). Again, *BANK_SIZE* and *BRANCH_TYPE* don't seem to matter in determining the likelihood of requesting collateral.

Column (B) shows the OLR estimation results for the determination of the amount of collateral for the same sample of loans used to estimate the models that explain the use of collateral. The dependent variable is '*FULL_COLLATERAL*', which measures the frequency at which a bank's collateral requirement amounts to 100% of loan size. The main independent variables are use of collateral, loan size, and borrower's risk characteristics, already described in Table 6.2. From column B, it can be observed that *REQUEST_COLLATERAL* and *LOAN_SIZE* are positive and very significant, both at 1% in explaining the likelihood of collateral covering 100% of the face value of the loan. A positive value indicates that an increase in the corresponding variable increases the likelihood that the bank will require the use of full collateral as opposed to partial collateral. These results are consistent with the predictions by Boot et al. (1991) and Jimenez et al. (2006) that the amount of collateral pledged in a particular loan will increase with the size of the loan. Thus, the empirical evidence confirms the hypothesis that banks' collateral requirement depends on the loan size, regardless of whether the firm is large or small.

FIRM_SIZE and *FIRM_RATING* are also negative and significantly related to the probability of requesting full collateral on loans. A negative sign implies that larger firms and firms with higher credit rating are less likely going to be asked to pledge full collateral. Interestingly, this result corroborates theories that explain collateral as a "loss mitigation" device in response to

adverse selection problems (Berger et al., 2011). Therefore, this empirical evidence is a case of safer borrowers pledging less collateral, which necessarily implies that safer borrowers have a lower probability of default and will attract lower risk premiums.

Finally, *BRANCH_TYPE* seems to have an effect on the amount of collateral requested, implying that the amount of collateral requested (as a percentage of the loan size) could vary significantly between retail branches and commercial branches.

It is worthy of mention that the reliability of parameter estimates provided in model 1 and 2 may have been compromised by the presence of multicollinearity, given that two of the bank dummies, *BANK_DUMMY5* and *BANK_DUMMY12* were omitted as a result of collinearity. This problem may have been caused by fitting models with a relatively small sample size combined with a fairly large number of regressors. Long (1997) notes that highly correlated exposures and discrete exposures need larger sample sizes. Nemes et al. (2009) also note that logistic regression overestimates the odds ratios in studies with low to moderate sample size. The small sample size induced bias is a systematic one, bias away from null. Regression coefficient estimates shifts away from zero, odds ratios from one. However, as the sample size increases, the distribution function of the odds ratio converges to a normal distribution centered on the estimated effect. The log transformed odds ratio, the estimated regression coefficients, converges more rapidly to normal distribution. Hence, care should be taken to note that given the relatively small sample size employed in this study, the distributions of the sample may be highly skewed and odds ratios may have been overestimated.

6.4.3 Robustness Checks

As part of robustness checks to test the quality of predictors in the models used, the stepwise regression procedure was employed to determine the most important predictors of risk premium and collateralization of SME loans in Nigerian banks. As noted in chapter 4, the stepwise regression is a multiple regression procedure that is used to select useful subsets of variables and to evaluate the order of importance of independent variables in predicting a dependent variable (see chapter 4 for a detailed explanation of the procedure). Appendix 6.1 shows the results of the stepwise procedure for the predictors of risk premium earlier examined. The dependent (or predicted) variable is *RISK_PREMIUM*, while the independent

variables (or predictors) are the variables used in model 1. At step 1 of the analysis, *RISK_ENVIRONMENT* entered into the regression equation and was significantly related to *RISK_PREMIUM* ($F = 26.866$, $\text{sig} = 0.000$). The multiple correlation coefficient, R , was 0.429, while the R -square was 0.184, indicating that approximately 18.4% of the variance of *RISK_PREMIUM* could be accounted for by *RISK_ENVIRONMENT*. At step 2 of the analysis, *RISK_ENVIRONMENT* and *FIRM_AGE* enter the model and both were statistically significant at the 1% level and jointly predicted 23.5% of the changes in *RISK_PREMIUM* ($F = 18.102$, $\text{sig} = 0.00$). At step 3, which is the final step, only three variables made it to the final regression – *RISK_ENVIRONMENT*, *FIRM_AGE* and *INTEREST_SMOOTHING* - accounting for 28.1% of the changes in *RISK_PREMIUM*. That is, according to the model, about 28.1% of the changes in the risk premium on SME loans can be explained by perceived changes in the external environment affecting SMEs, the firm's age and the interest smoothing practices of banks. This confirms the original OLR results, which show that only these three variables are statistically significant in predicting risk premium on SME loans in Nigeria. The rest of the predictor variables did not enter into the equation at step 3.

Appendix 6.2 shows the results of the stepwise procedure for the predictors of collateral usage. The model was estimated in five steps, and at the end of step 5, five of the bank dummies, *BANK_DUMMY11*, *BANK_DUMMY5*, *BANK_DUMMY7*, *BANK_DUMMY2*, and *BANK_DUMMY10* entered the regression and are significant ($F = 8.400$, $\text{sig} = 0.000$), jointly accounting for 26.8% of perceived changes in *REQUEST_COLLATERAL*. This result seems to confirm the earlier hypothesis that the determinants of collateral usage vary from bank to bank and are likely to be connected to lender specific factors such as the type of the lender, the specialization of the lender, the type of lending technology used and other differences in the business model of banks. However, the stepwise procedure seemed to have excluded some of the previously significant variables (e.g. *LOAN_DIVERSION*, *COLL_FIRM_SIZE*, and *COLL_FIRM_AGE*). This is one of the criticisms of the procedure, which was alluded to by Thompson (1995) and Lewis (2007) – i.e. the fact that it throws out some of the best predictors from the model.

On the predictors of collateral amount, appendix 6.3 shows that only two variables - *REQUEST_COLLATERAL* and *LOAN_SIZE* enter into the regression equation, jointly accounting for 31.6% of the variations in *FULL_COLLATERAL*. This supports the findings

from the OLR regression that the amount of collateral pledged will increase with the size of the loan. Use of collateral and loan size are thus the most important amongst the pre-specified predictors of full or partial collateralization in Nigerian banks. However, the procedure again seemed to have excluded *COLL_FIRM_SIZE* and *COLL_FIRM_RATING* which were previously significant in explaining the amount of collateral requested on SME loans.

6.5. Chapter Conclusions

This chapter has examined the determinants of risk premium and collateral on SME loans in Nigerian banks. From the descriptive analysis and empirical results, the determinants of risk premium on SME loans are largely connected with factors that underline the opacity and riskiness of SMEs in Nigeria, and are less connected with lender factors such as cost of funds and administrative expenses associated with loan appraisal and disbursement. The predominant reasons why Nigerian banks charge higher risk premium on SME loans are linked with SMEs' susceptibility to failure and changes in the external environment. Relationships also play a role in determining risk premiums. In most Nigerian banks, customers with longer relationships with the bank (i.e. repeat customers) tend to benefit from lower interest rates. Though not much evidence was available to support interest rate smoothing among the sample of loan officers, the empirical results show that it is significantly related to the likelihood of lower risk premium on SME loans in Nigeria.

The determinants of collateral usage vary from bank to bank and are likely to be connected to the type of the lender, the specialization of the lender, the type of lending technology used and other differences in the business model of banks. However, the likelihood that banks will request collateral is also influenced by borrower characteristics such as the firm' age, firm size and the risk of loan diversion. Loan size, firm size and borrowers' credit rating are also significant factors that determine the probability that a bank will request full or partial collateralisation. The descriptive analysis shows that real estate and cash-backed assets are the most accepted forms of collateral used in Nigerian banks today, while movable assets are less patronised because of the legal and financial constraints that come with their use.

CHAPTER 7

LOAN OFFICERS, INFORMATION ACQUISITION AND THE VALUE OF RELATIONSHIP LENDING TO NIGERIAN BANKS

7.1. Introduction

Generally, SME lenders use a variety of lending technologies to resolve the problems of informational opacity associated with small firms. The main categories are ‘relationship driven’ technologies, and ‘transactions driven’ technologies (Berger and Udell, 1995, 2003, 2006; Stein, 2002). Relationship banking is a very popular term in the banking literature and it refers to the provision of financial services by a financial intermediary that invests largely in acquiring ‘customer-specific information’, especially of a ‘proprietary’⁵⁰ nature’ and adds to this body of private information through ‘multiple interactions with the same customer over time and/or across products’ (Boot, 2000:10) as well as through the local community in which the customer operates. Banks obtain proprietary information often through *screening* and they consolidate the information gathered over time as they appraise the profitability of their clients’ investments through *monitoring* (i.e. multiple interactions). On the other hand, transactions driven banking tend to provide *arms-length* finance and focuses on one transaction rather than emphasising continuous information gathering across multiple transactions and across time.

Some recent work on relationship lending has placed more emphasis on the role of bank loan officers in acquiring soft information because it is the loan officers themselves that have direct contact with the bank’s borrowers. More specifically, in the SME credit market, loan officers are responsible for conducting due diligence during the underwriting phase and monitoring the borrower after the loan is disbursed (e.g. Berger and Udell, 2006). However, institutional frictions may make it difficult for loan officers to communicate soft information within large banking organisations (e.g. Stein, 2002; Alessandrini et al., 2009; Liberti and Mian, 2009). This means that because soft information is private (to the loan officer) and non-verifiable, it is relatively more difficult to transmit across hierarchical layers within a large organisation (Liberti and Mian 2009). For example, under full decentralisation of lending functions, a loan

⁵⁰ Proprietary information refers to information that is privy to only the financial intermediary and the customer.

officer has authority to allocate a bank's funds. Given that he has capital to work with, he will devote more time and effort to research and documentation since his incentives to do research is relatively strong. This also makes the loan officer to develop his expertise. In contrast, however, if a loan officer is functioning as part of a large multi-bank hierarchy where a centralised lending strategy is in place, he is not motivated enough to give quality time to research and documentation, because he knows that capital allocation will ultimately be decided by someone higher up in the organisation. Since he doesn't get a chance to do a thorough job for fear of his research efforts going into waste, he is unable to pass credible information up the hierarchy and hence capital allocation is instead done using more of objective criteria than subjective assessments. Since loan officers are the ones in contact with local business customers, it then means that the relevant relationship in SME lending is the *loan officer-entrepreneur* relationship, not the *bank-entrepreneur* relationship (see Berger and Udell, 2002).

Notwithstanding the theoretical relevance of the role of loan officers to relationship lending, there has been very little direct empirical research on the role of loan officers in providing this lending technology. The theoretical foundations of relationship lending suggest some clear and interesting empirical implications: If the loan officer plays such an important role in relationship lending, then we would expect to see a link between loan officer *attributes* and soft information acquisition as well as a link between loan officer underwriting/monitoring *activities* and soft information acquisition. For example, we would expect to see an association between the soft information acquisition and such things as the skill level of the loan officer (an attribute) and the frequency of contact or meeting between the loan officer and the borrower (an activity). This chapter explores the link between soft information acquisition and loan officer attributes/lending activities as well as examines the benefits or economic value of relationship lending to Nigerian banks. The latter hypothesis is a validation test to see the impact of the accumulation of soft information on the benefits of relationship lending.

The significant contribution of this study is that by focusing on the activities of loan officers, we can analyse the underlying mechanism that drives the accumulation of soft information. Other relationship lending studies have tended to focus on the borrower benefits from relationship lending without due consideration to the role of loan officers in generating those benefits (e.g. Petersen and Rajan, 1994; Berger and Udell, 1995; Cole, 1998; Harhoff and

Korting, 1998; Cerqueiro, et al., 2011; Agarwal and Hauswald, 2010). Thus in essence, this study tends to address the fundamental issues of whether loan officers are central to soft information acquisition, and what value relationship lenders derive from soft information accumulation. This study derives its models mainly from the study by Uchida, Udell and Yamori (2012). However, the essential difference is that while their study surveys firms, this study examines the topic from a supply-side perspective. In addition, this study introduces new parameters to the determinants of soft information accumulation (e.g. independent approval of loans by loan officers, discretion in setting interest rates, frequency of communication and relationship banking experience), as well as new measures of relationship benefits (e.g. lending efficiency, cost effectiveness, customer satisfaction, additional business and loan performance variables). Moreover, the country of study they used was Japan, a much more developed banking system than Nigeria, which is used in this study. In addition, this aspect of information acquisition in SME lending has never been studied for Nigeria, one of the largest banking systems in Africa and hence this study represents a novel contribution to the body of knowledge in Nigeria and indeed Sub-Saharan Africa.

The main findings from this chapter are two fold: (1) The predominantly centralised lending strategy in Nigerian banks impacts negatively on the accumulation of soft information by loan officers, implying that not all information collected by the loan officers is utilised in taking lending decisions. (2) The proprietary information (or knowledge) loan officers gather through social interaction with their customers, however, tends to yield some benefits for Nigerian banks. The most dominant is the generation of repeat business through greater customer satisfaction from bank relationships. Other benefits from relationship lending include better lending decisions and greater loan quality.

The rest of this chapter is structured as follows: Section 7.2 highlights the main hypotheses and examines in some detail the related literature on the role of loan officers in soft information acquisition as well as the benefits and costs of relationship lending to banks. The data and methodology are described briefly in section 7.3. This section also analyses the findings from the descriptive statistics and presents an overview of the econometric method used for the empirical analysis (full description of the econometric method, the OLR technique is found in chapter 4). Section 7.4 presents and analyses the empirical results of the study, while section 7.5 concludes the study.

7.2. Main Hypotheses and Related Literature

Hypothesis 5: *Relationship lending (based on information acquisition and personal touch by relationship managers) is of high economic value or significance to Nigerian banks*

7.2.1. The Role of Loan Officers in Soft Information Acquisition

The literature on bank lending to SMEs has emphasised the dichotomy between soft information and hard information. Specifically, this literature has identified soft information with “relationship lending”, and hard information with “transactions-based lending” (e.g. Stein, 2002; Berger and Udell, 2003, 2006; Petersen, 2004; Berger, et al., 2005). Hard information is quantitative, easy to store and transmit in impersonal ways, and its content is independent of the collection process. On the contrary, soft information is not easily quantified and consists of information gathered over time through contact with the firm, the firm’s management/entrepreneur, the firm’s suppliers and customers, and other local sources (Uchida et al., 2012).

Hypothesis 5a: *Loan officers accumulate soft information by collecting, analysing and synthesizing information gathered from SME borrowers over the life of their lending relationship with the bank and through frequent and personalized contact with them and the local community in which they operate.*

The acquisition of soft information by relationship lenders is not an end in itself. Banks (through the loan officers) *acquire* and *process* soft information and *produce* additional information about firms and their investment projects in order to allocate capital efficiently (Stein, 2002), i.e. make efficient lending decisions. First, banks *acquire* or gather information supplied by firms about their business, sector of activity, products, services, markets, suppliers, transaction history, and previous performance over time. Sometimes, relationship lenders also garner pockets of classified business information from local market sources collected from their borrower’s customers, suppliers, competitors or neighbouring businesses (Petersen and Rajan, 1994; Berger and Udell, 1995; Mester et al., 1998; Degryse and Cayseele, 2000). Secondly, banks *process* this information by analysing and profiling customers’ according to their risk classes and profitability. They do this by observing their character and fidelity to monetary obligations such as their ability to repay loans, frequency of deposits or their level of commitment to any other financial services provided by the bank

(Nakamura, 1994). They also analyse the demand for their products and the sales or revenue trends of the customer's business. Thirdly, on the basis of such knowledge and experiences, banks then *produce* or generate additional information about the credit worthiness of their customers (i.e. their ability to repay loans) and the viability of their investment projects for the purpose of making informed lending decisions. In many banks, the information is usually produced in the form of loan request documentation and credit risk reports sent to the head office or the central credit committee, which ultimately culminates in either an acceptance or rejection of the credit requests.

In advanced credit markets, the processing of information is mostly done electronically using credit scoring models. In Nigeria and many Sub-Saharan African countries where the credit system is still underdeveloped, banks rely hugely on traditional relationship lending and other psychometric means of assessing borrowers, i.e. the use of qualitative assessment based on the 5Cs of lending – *character, capacity, capital, collateral* and *conditions* – in assessing the chances of borrower default. Traditionally, relationship-driven banks rely on soft information collected on borrowers (through repeated interactions over time) as a basis for lending to informationally opaque SMEs as explained above.

Empirical evidence shows that relationship lending is beneficial to lenders because it improves the efficiency of loan contracting and brings about an increase in borrower access to credit as the relationship is deepened (Diamond, 1991, Boot and Thakor, 1994; Petersen and Rajan, 1994, 1995; Berger and Udell, 1995; Harhoff and Korting, 1998, Boot, 2000). Relationship lenders tend to be more efficient in collating detailed local information about the credit risk profile of their clientele before processing a loan. It has been widely argued that relationship lenders are more informationally efficient than non-relationship lenders because they are better able to acquire and synthesize soft information from their SME customers and then produce additional information that aid in the capital allocation process or credit decision-making. This is possible because the nature of SMEs business allows relationship banks to develop longer and more personal relationships with their customers over time. Through the checking and savings account history of their local customers, relationship banks are able to monitor their cash flows and sales performance over time (Nakamura, 1994; Petersen and Rajan, 1994; Carter, McNulty and Verbrugge, 2004) and then utilise this information in the lending process (Akhigbe and McNulty, 2005; Berger et al., 2005). By contrast, non-

relationship banks are unable to acquire detailed information like this since they mostly deal with large firms who often have multiple business divisions and keep several banking relationships (Nakamura, 1993a, 1993b; Carter, McNulty and Verbrugge, 2004). More so, relationship banks have a long history of lending in the local community and this gives them an edge over the local branches of their non-relationship banking counterparts⁵¹.

Hypothesis 5b: *A decentralised lending structure, characterised by autonomous lending by loan officers, reinforces the acquisition of soft information and hence allows relationship banks to effectively act as delegated monitors.*

Another aspect in which relationship banks are informationally efficient is in the type of lending administration structure. In decentralised lending structures where the loan officer is able to make some lending decisions autonomously, it is relatively easy to use proprietary financial information about a customer's loan portfolio and the surrounding business circumstances to make lending decisions. On the other hand, in a centralised lending structure with many layers of managerial control and extensive branch network, it is difficult for top managers to review all loan applications, particularly over a wide geographic area (Keeton, 1995). Thus, banks with this structure tend to centralise all lending decisions in order to avoid agency problems. Loan officers at non-relationship banks are given less autonomy than their counterparts in relationship banks and are often made to follow strict lending rules and guidelines. As a result, non-relationship banks might have strong disincentives to build business relationships in the local community and this means less acquisition of borrower information. Since relationship lenders have cost advantage in information gathering by proximity to customers, they are arguably more efficient than non-relationship banks in delegated monitoring and enforcement of SME loan contracts (Diamond, 1984 and Nakamura, 1994).

⁵¹ Through frequent transactions with small businesses, relationship banks can also garner timely information about the local economic conditions prevalent in the community. On the other hand, the standardised criteria or policies of non-relationship banks may exclude any form of specialised information, which may be available to a loan officer (Nakamura, 1994)

7.2.2. Benefits and Costs of Relationship Lending

The second objective of this chapter is to examine the economic value or benefits of relationship lending by taking a look at the impact of soft information accumulation by loan officers. While many studies have focused on the borrower benefits of relationship lending, only a few studies have looked at the value of relationship lending to banks (e.g. Ergungor, 2005; Peek, 2007; Bharath et al., 2007). This subsection provides some background information on the theoretical benefits of relationship lending, which also forms the basis of the descriptive and empirical analyses sections.

Benefits of Relationship Lending

Under relationship lending, the acquisition of proprietary information over time about the entrepreneur, his line of business and the local business community is more important than formal financial ratios and other information readily available to the public. This is the essence of relationship banking, i.e. building proprietary information by developing relationships with customers over which will in turn be used to inform lending decisions.

Hypothesis 6a: *Relationship lending allows banks to take better lending decisions (e.g. to accommodate good borrowers and screen out bad borrowers)*

Boot (2000) enumerates a number of benefits of relationship banking: First, it improves information exchange between the lender and the borrower, thus *overcoming the problems of information asymmetry*. In this regard therefore, relationships improve information quality and reduce the probability of discouragement for good borrowers in a competitive market. Second, it offers *flexibility and discretion in financial services contracting*. For example, under relationship lending, renegotiation of loan contract terms is relatively easier, unlike in capital markets where funding arrangements are rigid. Flexibility can also enhance investment efficiency (Schmeits, 1999). In connection with flexibility, relationship lending can also accommodate *the intertemporal smoothing of contract terms*. For example, banks are often prepared to incur short-term bank losses for long-term gains when they offer subsidized credit to *de novo* corporations. Longer bank-borrower relationships have been found to reduce loan prices and the likelihood of the borrowing firm to pledge collateral (Petersen and Rajan, 1994; Berger and Udell, 1995).

Hypothesis 6b: *Relationship lending (based on multiple interactions with SME customers over time and/or across products) results in reduced screening and monitoring costs. Effective monitoring also results in better loan quality.*

A third benefit of relationship lending, according to Boot (2000), is that the use of loan covenants and other financial arrangements or contracts under relationship banking allows for *better control of potential conflicts of interest and reduces agency costs*. Fourth, the proximity between the bank and the borrower can *facilitate loan monitoring* especially in asset-based lending (e.g. in monitoring the value of collateral). This further enhances the acquisition of more proprietary information, which could potentially generate more lending for the borrower, and thus more rents for the bank.

In addition, because relationship lenders tend to have the advantage over non-relationship lenders in information processing and in monitoring of small business loans, it is thus expected that *loan quality*⁵² *will be greater in relationship banks* than in non-relationship banks (Nakamura, 1994). However, loan quality may not always be guaranteed even with information advantage and monitored lending, as there are other factors influencing loan quality including local economic conditions, geographical location of business, competition and other market factors (e.g. McNulty, Akhigbe and Verbrugge, 2001).

Hypothesis 6c: *Relationship lending by banks results in greater customer satisfaction derived from offering superior services to customers, which in turn produces repeat business for the bank*

Due to their personal touch with customers, relationship lenders are arguably better able to offer a superior level of customer service than non-relationship lenders (Levonian and Soller, 1996). Better services to customers could translate into additional business for the bank, which is often generated from customer satisfaction in previous or current lending relationships. In a study by Bharath et al. (2007), relationship lending has been found to generate *additional business for the relationship lender*. For example, a relationship lender may have a higher probability of selling information-sensitive products to its borrowers, which could potentially lead to the contracting of additional business, e.g. future lending business, debt/equity

⁵² Loan quality is measured in at least four ways: non-performing loans; loan loss provisions; net impairment charges (set off against loss reserves); and other real estate loans (all as a percentage of total loans).

underwriting deals, and other fee based financial services. The results from Bharath et al. (2007) also show that the probability of a relationship lender providing a future loan is 42%, while for a non-relationship lender, this probability is 3% (Bharath et al. 2007).

Hypothesis 6d: *Relationship lending improves the profitability of SME loan portfolio*

Ultimately, for relationship lending to be considered an effective or valuable lending technique, it must enhance profitability and shareholder value. The primary concern here is whether relationship lenders are more profitable in SME lending than non-relationship lenders. While relationship lenders tend to make use of ‘soft’ information based on relationships and personal interactions in making non-standardised loans and offering customised financial services (e.g. DeYoung, Hunter and Udell, 2004; Carter and McNulty, 2005), the focus of non-relationship lenders is on the use of ‘hard’ information to make standardised loans and produce uniform types of financial services (e.g. credit card loans). Under these circumstances, relationship lenders and non-relationship lenders will have different ways of attaining high profits (Akhigbe and McNulty, 2005). In some studies on the profitability of SME lending, Berney, Kolari and Ou (1998) found using a multivariate analysis that *relationship lenders (referring to small banks) earn higher profit rates on SME loans than other assets on average*. Even after controlling for various types of bank risk (credit, capital, funding, and liquidity risks), asset size and market competition, they still find that *SME loans contribute positively and significantly to bank profits*. In other words, the result displaces the common belief that small business loans are too risky to indulge and should be done away with. Also revealed from their study is the fact that relationship lenders have a higher tolerance for risk than other banks. Relationship lenders tend to be more aggressive in committing investible funds to small business loans than do non-relationship lenders.

From the above analysis, we can summarise the effectiveness and economic benefits of relationship lending *vis-à-vis* a range of outcomes:

- (i) *Information Efficiency in Loan Origination:* here the value of relationship is measured in terms of information adequacy and usefulness, screening ability or quality of lending decisions. In banks with decentralised lending structures, loan officers also enjoy some amount of discretion in making lending decisions.

- (ii) *Cost Effectiveness of Relationship Lending:* Relationship lending reduces the unit cost of making a loan, i.e. (screening costs) as well as the cost of monitoring customers ex-post. Effective delegated monitoring can be expected to result in better loan quality, as measured by the amount of non-performing loans as a percentage of total loan portfolio
- (iii) *Additional Business:* This has to do with the amount of repeat business the bank enjoys from the small business customer which is directly attributable to better customer satisfaction and the relationship lender's informational advantage over a non-relationship lender.
- (iv) *Profitability:* Relationship lenders tend to be more profit efficient than non-relationship lenders, at least from a long-term perspective. Profitability is measured in several ways, one of which is the risk-adjusted returns on SME loans.

Costs of Relationship Lending

The benefits notwithstanding, relationship lending has been criticized on several grounds. First, it is widely held that because it is difficult and costly for financial intermediaries to obtain reliable information on SMEs, relationship lending is thus very costly. Since asymmetric information is relatively more associated with SMEs than large businesses, banks especially large ones have resorted to the use of impersonal approaches in lending to SMEs. Impersonal lending approaches refer mostly to those lending practices that support lending at a distance because of certain characteristics of the SME borrower or his firm. Such lending practices might involve more of the use of mail or telephone conversations rather than frequent personal visits to the bank as relationship banks do. (See Berger et al., 2005)

Apart from the diseconomies of scale, a second pitfall of relationship lending is the fact that it *takes a long time to make loans* on the basis of relationship lending, since the bank must acquire as much information as possible to be able to extend loans to credit-worthy businesses. On the other hand, empirical evidence reveals that decisions on credit-scored loans (used mostly in advanced credit markets) tend to be taken relatively easier and faster than relationship-based loans and could be carried out over greater distances (e.g. Craig, Jackson III and Thomson, 2005). Relationship banks are unable to effectively *penetrate new markets* without having to bear the cost of establishing branch networks. This assertion is corroborated

by Anderson (2007) when he stated that ‘...relationship lending is appropriate in communities where lender and borrower had personal knowledge of each other, but is inefficient in an era of high customer mobility and extended branch networks’ (pp.7).

Unlike relationship-based approaches, research has found that the use of credit scoring reduces the cost of information between borrowers and lenders (Frame, et al., 2001:813) as well as the time and human input involved in reviewing loan applications (e.g. Feldman, 1997). Since data has replaced experience, the role of underwriters and human judgement in credit decisions, as used in less developed credit markets, is now less important. To the extent that distance lending is now feasible, most non-relationship banks tend to keep an arm’s length from their customers and tend to invest less in building relationships.

Boot (2000:16-17) also explains the ‘dark sides’ of relationship banking using two key phases. First is the ‘soft budget constraint’ problem and the second is the ‘hold-up’ problem. Soft budget constraint refers to the problems that banks face when it appears that they are ‘tied in’ in a relationship as the borrower’s main source of external finance. There is therefore a tendency for borrowers to have perverse incentives to compel their banks to grant additional loans to forestall default on previously issued credit. The proximity that relationship banking affords may make banks to soften (rather than being tough on) their approach to the enforcement and/or renegotiation of loan contracts. One possible solution to this problem is to enforce collateral and grant seniority of debt claims to banks. This will facilitate timely intervention when a default is looming and insulate banks from undesirable consequences (Boot, 2000). The hold-up problem occurs because the proprietary information that banks obtain of firms gives them information monopoly and market power, which may result in lending to firms at non-competitive rates in the future. This means that lenders may use long-term implicit contracts where they charge higher loan rates in the long term to compensate for subsidized rates granted to borrowers in the short term (Sharpe 1990; Rajan, 1992). A firm’s reaction to the hold-up problem may be to withdraw from borrowing from the bank, but this could lead to loss of potentially viable investment opportunities. Another solution could be to resort to multiple bank relationships. Again, this may prove to be costly because it is difficult for the firm’s new bankers to get the primary lender to transfer soft information it has gathered on the firm over time. Moreover, it could even exacerbate the problem of credit availability (Ongena and Smith, 2000). Another argument is that more competition could discourage

relationships⁵³ (Berlin, 1996; Boot, 2000) and undermine the value of information (Chan et al., 1986). Fierce inter-bank competition may reduce the ability and willingness of banks to fund de novo corporations. That is, competition may make credit subsidy to young firms unsustainable, and hence frustrate the intertemporal pricing of loans.

The following points summarise the economic costs or downsides of relationship lending:

- (i) *Cost Ineffectiveness*: Relationship lending consumes a lot of time and relies too much on human input to assess the credit worthiness of a borrower. Moreover, relationship banks are unable to issue standardized loans at relatively lower costs. Due to these setbacks, investing in relationships is not cost-effective.
- (ii) *Inadequate Information*: In many cases, relationship lending does not seem to incorporate hard (quantitative) information on the borrower due to its relative absence for SMEs. It relies mainly on soft information gathered over time through relationship development.
- (iii) *Adverse Selection*: Soft information on borrowers is hardly adequate and hence lending decisions taken based on inadequate or limited information could often be subjective and wrong. This tends to discourage risk-based pricing of loans and may eventually lead to inefficient credit rationing process.
- (iv) *Undue Relaxation of Credit Terms*: Since relationship lending allows for flexibility in loan contracting, it could sometimes lead to undue relaxation of loan terms, especially when evaluating loans granted to longer-term bank customers. This is because of the implicit principal agent problem which ‘relationships’ between loan officers and borrowers sometimes entail, which could in effect limit the short-term profit maximisation objective of the relationship bank.
- (v) *Shift away from Traditional Lending to fee Income*: Since traditional SME lending is costly and risky, relationship banks could prefer to finance SMEs through other means (e.g. asset-based lending, leasing, etc) and provide other financial management services to them.

⁵³ The nature of the contract terms between a bank and a firm, and hence the amount of profit that the bank retains over the life of the lending relationship depends on the number and behaviour of the bank’s competitors, including both banks and non-bank lenders, e.g. finance companies (See details in Berlin, 1996)

7.3. Data and Methodology

7.3.1. Data Collection

This chapter utilizes the *Questionnaire Survey of Relationship Managers and Loan Officers in Nigerian Banks*, which was conducted in 2014. A total of 249 questionnaires were distributed to 12 Nigerian banks, out of which 121 were returned, yielding a moderately high response rate of 48.6%. The survey asked loan officers about their role in SME loan decision making, their bank's lending administration structure, hierarchy of loan decision making, loan officer lending discretion as well as the nature of bank-borrower relationships and the economic benefits and costs of relationship lending to Nigerian banks. The study took samples across branch types and bank categories. 65 Loan officers (or 53.7% of the respondents) were drawn from commercial business branches, while 56 loan officers (or 46.3%) served in retail business branches. 47 loan officers served in Tier 1 banks (i.e. the 5 largest banks in Nigeria), while the remaining 74 loan officers came from Tier 2 banks (i.e. the smaller bank category in this sample, containing 7 mid-sized banks). The study also considered the relationship banking (RB) experience of the respondents. Out of the 121 respondents, 11 (or 9.1%) had RB experience of less than 1 year, 31 (or 25.6%) had RB experience of between 1 to 5 years, 60 (or 49.6%) had RB experience of between 6 to 10 years, while 19 (or 15.7%) had more than 10 years RB experience. The mean number of RB experience was 6.59 years. (See chapter 4 for full description of the sampling techniques as well as the distribution and collection techniques).

7.3.2. Descriptive Analysis

This sub-section examines the data collected from the banks and describes the main features of the lending administration structure in the sample Nigerian banks, including the degree of centralisation and decentralisation of lending functions, hierarchy of lending decisions, and loan officer authority, measured by the independent approval of loans and discretion in setting interest rates. This sub-section also examines the nature of relationship lending in the sample banks, the strength of bank-borrower relationships and information acquisition as well as the banks' perception (and rating) of the value derivable from investing in lending relationships.

Decision Making by Loan Officers in Nigerian Banks

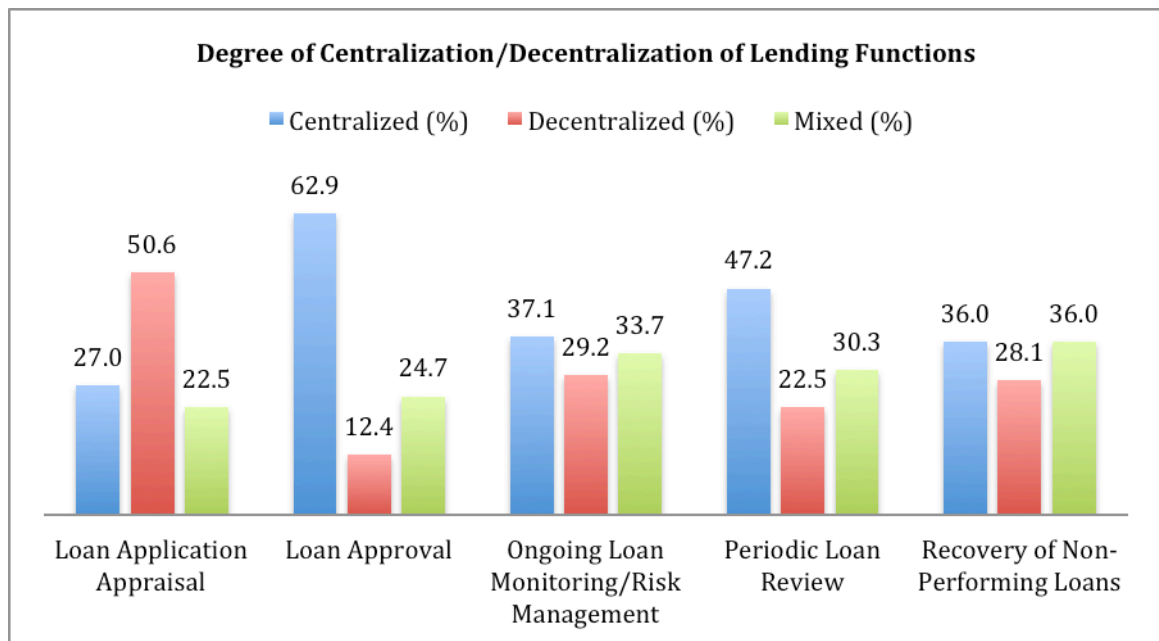
The study revealed that 3 out of the 12 sample banks practice a wholly centralised SME lending strategy (in which case all SME lending decisions are taken at the head office), while the remaining 9 banks practice a mix of centralised and decentralised strategy (in which case some lending decisions are taken at the head office, while others are taken at the branch levels). From table 7.1 and figure 7.1, about half (50.6%) of the loan officers say that loan appraisal is carried out only at the branch level, while 27% say that appraisal is done at the head office only. As reviewed in chapter 6, loan appraisal involves the evaluation of the merits of a loan application in terms of the purpose of loan, genuineness of its need, the amount to be borrowed, the borrower's repayment capacity, availability of collateral and other parameters upon which a loan decision is made. In some banks, the valuation of the borrower's collateral is done at the branch level, and reviewed by the head office.

Table 7.1. Centralisation/Decentralisation of Lending Functions in Nigerian Banks

Lending Functions	Centralized	Decentralized	Mixed
	(%)	(%)	(%)
Loan Application Appraisal	27	50.6	22.5
Loan Approval	62.9	12.4	24.7
Ongoing Loan Monitoring/Risk Management	37.1	29.2	33.7
Periodic Loan Review	47.2	22.5	30.3
Recovery of Non-Performing Loans	36	28.1	36

Source: Survey of Loan Officers/RMs in Nigerian Banks

Majority of loan officers (62.9%) say that loan approval is solely decided at the head office, while only 24.7% admit that loan approval decisions are taken at both the branch level and by the central credit evaluation team. In some banks, approval is done in two stages: first approval at the branch level, and then final approval by the credit sanctioning team at the head office. Some of the loan officers reported that degree of centralisation or decentralisation of loan approval depends on size of the loan, the type of facility sought (e.g. asset finance, working capital, overdraft, retail credit etc) and the bank's approval grid for the loan specification.

Figure 7.1: Degree of Centralisation/Decentralisation of Lending Functions

In one of the tier 1 banks surveyed, the threshold is as follows: (a) amounts less than ₦1 million (~ £4,000) are decided at the branch level in collaboration with final approval granted by the Business Development Manager domiciled in the branches; (b) amounts between ₦1million and ₦25 million (~ between £4,000 and £100,000) are decided at the branch level with final approval of the Group/Regional Head; (c) For amounts, between ₦26 million and ₦100 million (~ between £100,000 and £400,000), the hierarchy of approval decisions range from the branch level up to the Business Development Manager, the Group Head, the Executive Director (ED) and the Central Credit Approval Committee. Similarly, in another retail branch of a tier 1 bank, loan application appraisal is mostly decentralised, while the credit committee at the head office decides approvals above ₦5 million (~ £20,000). Approval of loans less than ₦5 million passes through from the branch to the Group/Divisional Head.

In some commercial branches, approval of loan amounts below ₦10 million (~ £40,000) can be decentralised if they are cash-backed (i.e. where borrowers also have equivalent loan amount in fixed deposits in the bank). In one of the tier 2 banks, a loan officer reported that any amount less than ₦10 million is processed and approved within the region, while amounts over ₦10 million fall under the exclusive domain of the executive management. For most banks, microfinance loans are often approved within the branch level and it ranges from ₦100,000 to ₦500,000 (~ £400 to £2,000). These loans are often not collateralised. Retail

credits (usually not exceeding ₦5 million) also tend to be processed, approved and disbursed at the branch and zonal levels for most banks. Table 6.2 shows the average number of functional levels it takes to approve an SME loan in Nigerian banks beyond the initial level of contact. It can be observed that as the size of loans increases, the number of hierarchical levels required for approval also increases.

Table 7.2 Hierarchy of SME Loan Decision Making by Size of Loan

Loan Size	0 Functional Level		1 Functional Level		2 Functional Levels		3 Functional Levels		> 3 Functional Levels	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Less than ₦100, 000	15	12.4	21	17.4	27	22.3	26	21.5	32	26.4
₦100, 000 to less than ₦500, 000	2	1.7	12	9.9	31	25.6	43	35.5	33	27.3
₦500, 000 to less than ₦2, 500,000	n.a	n.a	4	3.3	30	24.8	49	40.5	38	31.4
₦2, 500,000 to less than ₦5, 000,000	n.a	n.a	2	1.7	19	15.7	51	42.1	49	40.5
₦5, 000,000 to less than ₦10, 000,000	n.a	n.a	1	0.8	15	12.4	51	42.1	54	44.6
₦10, 000,000 to less than ₦20, 000,000	n.a	n.a	2	1.7	8	6.6	45	37.2	66	54.5
₦20, 000,000 to less than ₦50, 000,000	n.a	n.a	2	1.7	6	5	38	31.4	75	62
₦50, 000,000 and Above	n.a	n.a	n.a	n.a	3	2.5	19	15.7	99	81.8
Valid N = 121										
n.a means "no score was obtained"										
All percentages (%) sum up to 100% horizontally across each rating grid										

Source: Survey of Loan Officers/RMs in Nigerian banks

Loan monitoring, risk management, periodic loan review and recovery of non-performing loans (NPLs) appear to be done extensively at both branch levels and at the head offices. Most loan officers say that the reason for the sharing of these functions is so that monitoring and risk management can be effective and comprehensive. Some also say that the combined effort serves as a form of checks and balances. In most banks, loan monitoring is done daily at the branch level, while extreme cases of past due obligations or default are escalated to designated loan collection or remedial recovery teams. In some banks, the level of centralisation adopted for the recovery of NPLs depends on the loan size. The head office handles larger amounts (e.g. corporate loans), while smaller amounts (i.e. retail loans) are recovered at the branch levels. In some instances, relationship managers are required to assist the recovery teams in persuading customers to liquidate distress loans or arranging a possible work out. Also, in quarterly loan portfolio review, relationship managers are required to present an update on their personal efforts in loan recovery.

According to Uchida, et al. (2012), there is a link between these loan officer activities and the accumulation of soft information. The degree of centralisation or decentralisation of these functions determines the amount of soft information that loan officers can generate in the course of underwriting and monitoring loans. It is possible to ascertain the level of acquisition

of soft information by observing the degree of participation by local relationship managers/loan officers in approving loans autonomously and taking interest rate decisions (Williamson, 1967; Petersen, 1999; Stein, 2002; Petersen, 2004; Benvenuti, *et al* 2010). Only 9 (or 7.4%) of the 121 loan officers surveyed have authority to independently approve loans, while only 18 (or 14.9%) have some degree of discretion in setting interest rates on SME loans. This implies that the acquisition of soft information in Nigerian banks is unlikely to be influenced by the decentralisation of the underwriting process.

It was also observed that those loan officers whose compensation is significantly tied to deposit mobilisation also tend to have some degree of authority in approving SME loans autonomously. However, most of those loans have to be cash-backed. Moreover, the size of loans they can approve independently is relatively small (usually ranging from ₦50,000 to ₦1,000,000). The typical margin of discretion in setting interest rates on SME loans for the loan officers with some flexibility range from 25 to 400 basis points (or 0.25% to 4%) below or above the prescribed rates.

To confirm the finding that Nigerian banks have a more centralised lending strategy, loan officers were asked if they think that decisions about SME loan approval and risk management are often decentralised. At least two-thirds (66.1%) of the respondents disagreed with the proposition that lending decisions are often decentralised (see table 7.3). In addition, 74.4% agree or strongly agree that lending decisions are rather rule-based, i.e. depend on hard and fast rules (objective or pre-determined criteria) and the sole evaluation of loan applications.

Features of Relationship Lending in Nigerian Banks

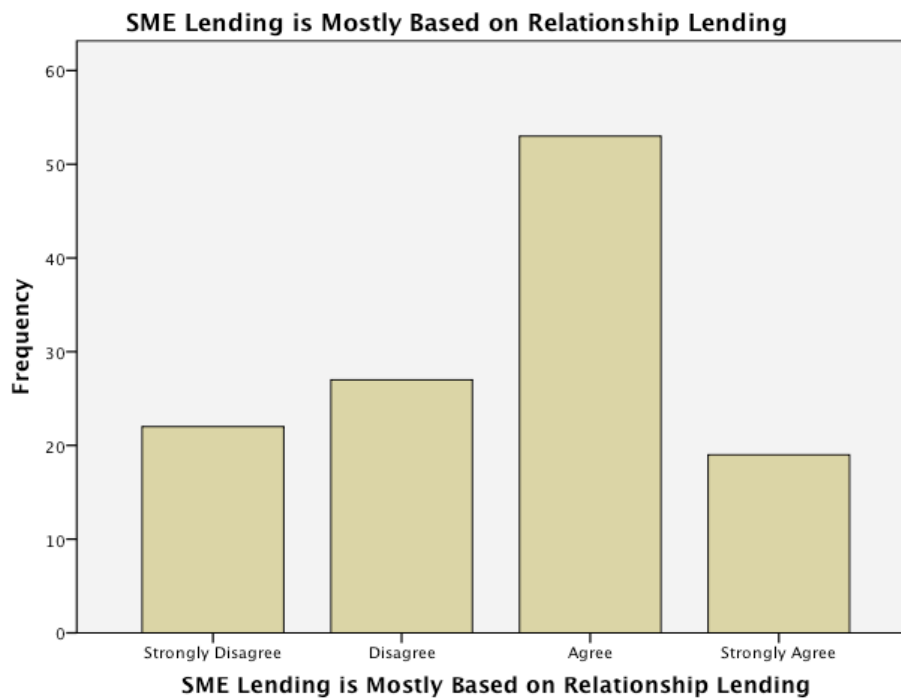
This study evaluated the nature of bank-borrower relationships in Nigerian banks. For the purpose of the study, the following definition of relationship lending was used, though the understanding of relationship lending seemed slightly different across banks:

“Relationship lending is used here to denote a situation in which a bank is willing to provide lending mostly on the basis of a previous relationship with the borrower such as a previous loan, savings deposit, long-term deposits, etc. More precisely, with relationship lending, financing is provided primarily on the basis of 'soft information', e.g., borrower characteristics, credit history with the bank, loan size, purpose of the loan, etc. Relationship lending involves frequent and personalised contact between the

loan officer and the small firm, its owners/managers, or even the local community in which it operates. Relationship lending is typically associated with decentralised loan approval and risk management". [Obtained from the Questionnaire – see Annex A]

Findings on the adoption or use of relationship lending techniques revealed that only 59.5% of respondents agree or strongly agree that SME lending is mostly based on relationship lending as defined above, while the remaining 40.5% either disagree or strongly disagree with this proposition.

Figure 7.2. Adoption or Use of Relationship Lending Techniques in Nigerian Banks



Source: Survey of Loan Officers/RMs in Nigerian Banks

From table 7.3, it can be observed that majority of loan officers surveyed (98.3%) either agree or strongly agree that their bank maintains a relationship with borrowers throughout the loan life. As noted earlier, banks use long-term relationships to resolve information asymmetry problems that may exist between the lender and the borrower (Berger and Udell, 1995). More than 97% also admit that their bank acquires financial information on SMEs before granting loans. Generally, in appraising commercial loans, bankers are interested in the following aspects of financial information: (1) the *credit history* of the borrower; (2) the *cash flow*

history and projections for the business; (3) the availability of *collateral* to secure the loan; (4) the *character* of the borrower, which is measured by several traits observed from prior business transactions, past or existing relationships, such as deposit or loan relationships, and references from professionals who have reviewed the firm's proposals; and (5) the loan documentation (Barrett, 1990). As noted earlier in chapter 5, the financial information that SMEs in Nigeria provide their banks often lacks detail and rigor, hence one of the reasons many Nigerian banks always require collateral or some form of guarantee before extending credit to high risk and opaque SMEs.

Table 7.3: Features of Relationship Lending in Nigerian Banks

Nature of Bank-Borrower Relationship	Strongly Disagree	Disagree	Agree	Strongly Agree
	(%)	(%)	(%)	(%)
My bank acquires financial information on SMEs before granting loans	1.7	0.8	29.8	67.8
My bank maintains a relationship with borrowers throughout the loan life	0.8	0.8	28.9	69.4
My bank maintains personalized and frequent contact with SME customers	0.0	3.3	43.0	53.7
My bank maintains contact with SMEs' local community of operation	0.8	30.6	48.8	19.8
SME loan approval decisions are often decentralized	37.2	28.9	27.3	6.6
SME lending decisions are rule-based (i.e. depend on hard and fast rules)	10.7	14.9	46.3	28.1

Ranking of Bank-Borrower Relationship Practices	Minimum	Maximum	Mean Score	Std Deviation
My bank maintains a relationship with borrowers throughout the loan life	1	4	3.67	0.538
My bank acquires financial information on SMEs before granting loans	1	4	3.64	0.592
My bank maintains personalized and frequent contact with SME customers	2	4	3.50	0.565
SME lending decisions are rule-based (i.e. depend on hard and fast rules)	1	4	2.92	0.927
My bank maintains contact with SMEs' local community of operation	1	4	2.88	0.725
SME loan approval decisions are often decentralized	1	4	2.03	0.957
Valid N = 121				

Source: Survey of Loan Officers/RMs in Nigerian Banks; SPSS Output

Another feature of relationship lending in Nigerian Banks is that the loan officers claim to maintain personalised and frequent contact with their SME customers (96.7%). As noted earlier, the social interaction between banks and their customers affect the quantity and quality of relationship available to banks (Lehmann and Neuberger, 2001). Berger et al (2005) affirms that large banks tend to develop more impersonal and longer distance relationships with their SME customers and by implication, rely less on soft information which is acquired through personal contact and by physical observation.

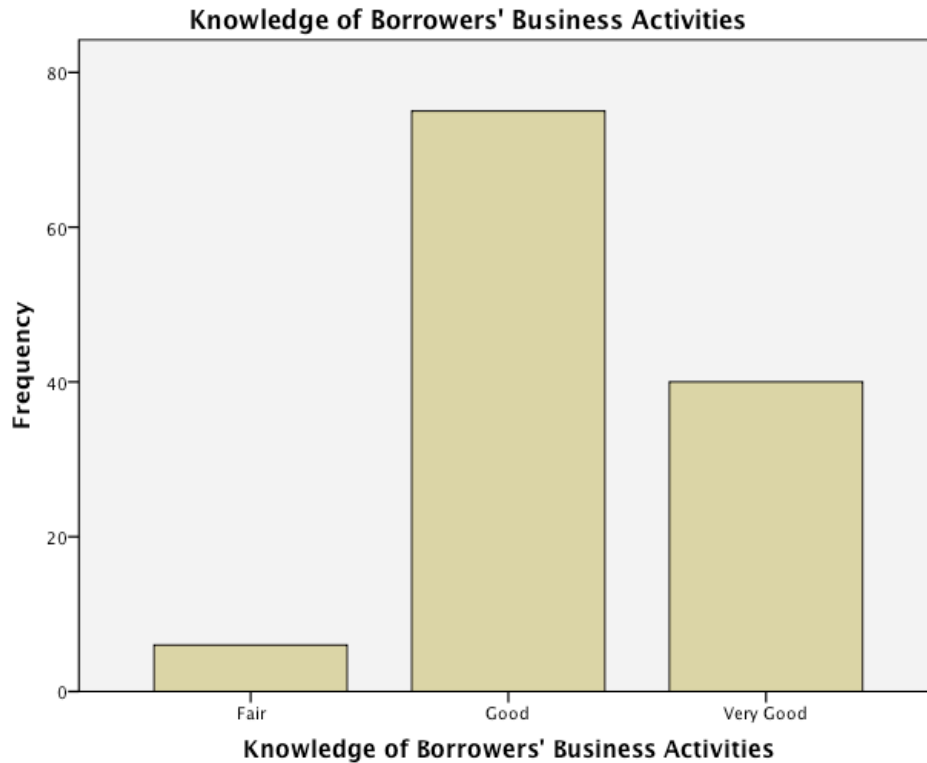
Table 7.4: Frequency of Loan Officers' Interactions with SME Customers

	Freq of face to face meetings		Freq of non-physical communications		Freq of interactions with firms' local market	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not at all	1	0.8	1	0.8	4	3.3
At Least Once in 6 Months	2	1.7	3	2.5	5	4.1
At Least Once in 3 Months	4	3.3	n.a	n.a	22	18.2
At Least Once in 2 Months	5	4.1	2	1.7	15	12.4
At Least Once in a Month	35	28.9	15	12.4	33	27.3
More than Once a Month	71	58.7	90	74.4	36	29.8
Daily or More than Once a Week	3	2.5	10	8.3	n.a	n.a
On Case-By-Case Considerations	n.a	n.a	n.a	n.a	6	5
Total	121	100	121	100	121	100
Valid N = 121						
n.a means "no score was obtained"						
All percentages (%) sum up to 100% vertically across each frequency grid						

Source: Survey of Loan Officers/RMs in Nigerian Banks

It can be inferred from Table 7.4 that loan officers in Nigerian banks tend to communicate more frequently with their customers using non-physical communication methods such as standard mails, emails and telephone as opposed to physical (face-to-face) meetings or visits (82.7% of loan officers communicate with their customers using non-physical methods as often as daily, weekly or more than once in a month as opposed to 61.2% who meet with their customers face-to-face within the same time frame). However, only about one-third of the loan officers (29.8%) admit that they frequently acquire additional information about their customers' businesses through contact with the firm's local market (e.g. suppliers, customers, competitors, or even neighboring businesses). Again, 'frequently' here means interactions of more than once a month.

Since the strength or quality of bank-borrower relationships (as measured by the frequency of social interactions) can be used to determine the level of soft information accumulation or knowledge acquired by the loan officer, the respondents were asked to rate their level of knowledge of their customers' business model and activities. Banks rated their knowledge using a three-point scale from "fair" to "very good". Of the 121 loan officers surveyed, only 40 (or 33.1%) said they had "very good" knowledge of their customers' business, while 75 (or 62%) said they had a "good" knowledge of their customers' business. The remaining 6 (or 5%) said they had "fair" knowledge of their customers' business (see figure 6.3).

Figure 7.3: Loan Officers' Knowledge of Borrower's Business Model and Activities

Source: Survey of Loan Officers/RMs in Nigerian Banks

When asked if the knowledge they have of their applicant firms and existing relationships with the firms/owners influence the setting of loan terms (e.g. interest rates, collateral requirements, loan tenor, etc), 74 (or 61.2%) of the loan officers said such knowledge is “important” in setting loan terms, while 33 (or 27.3%) said such knowledge is “marginally important”. The remaining 14 (or 11.6%) admit that knowledge of customer of soft information acquired is “irrelevant” to the underwriting process. This finding seems to be consistent with the general literature that banks use the private information they acquire from their borrowers over the course of a relationship to refine the contract terms offered to their borrowers (Petersen and Rajan, 1994, 1995; Berger and Udell, 1995). A detailed explanation can be found in chapter 6, which takes a look at the determinants of loan contract terms.

Economic Value of Relationship Lending to Nigerian Banks

Here, the bank's view of the value of lending relationships is presented. The respondents were asked to rate their perception of the benefits and costs associated with lending relationships. The finding reveals that the principal benefit from relationship lending, according to the bankers, is *additional business* (ranked 1st by mean 3.39, sd 0.631). About 94.5% of the respondents agree or strongly agree with the proposition that relationship generates repeat business for their bank (see table 6.5). This is consistent with the findings from Bharath *et al* (2007) and Peek (2007), who found separate evidence that investing in lending relationships attracts additional deposits, interest income and income from fee based activities, such as future loan underwriting and investment banking deals. Relationship lenders are able to cross-sell financial services products to relationship borrowers using the private information they have of the borrowers.

At the moment, Nigerian banks earn fee income from a number of ancillary financial services such as electronic banking, online bills pay, card based commission, cash management and custody transaction fees, pay roll processing, loan documentation and admin fees, foreign currency service fees, asset management fees, brokerage and financial advisory services, insurance services, etc. This has resulted in Nigerian banks declaring huge non-interest income as a key part of their annual operating income. For example, using 2013 year end figures, Zenith Bank declared ₦52.5 billion as fee and commission income out of a total income base of ₦311 billion (representing 16.88%). Similarly, Access Bank posted a fee income of ₦31.6 billion out of a total income of ₦213 billion (representing 14.83%). A tier 2 bank, Stanbic IBTC, known for its core of investment banking and pensions business, posted a fee and commission income of ₦33.3 billion out of a total income base of ₦85 billion (representing 39.41%).

The second benefit of relationship lending rated by the lenders is *better lending decisions* (mean 3.39 sd 0.585). Over 93% of the respondents agree or strongly agree that relationship lending allows their bank to take better lending decisions (i.e. to accommodate good borrowers and screen out bad borrowers). As noted earlier in section 6.2, relationship banking improves the exchange of value-enhancing information between borrowers and lenders, which the latter then use in the loan origination process (Petersen, 1999; Boot, 2000). Nigerian

banks, like other profit-seeking lenders will only extend credit to business ventures that have the potential to pay back such loans, and will prefer to ration credit accordingly.

Table 7.5: Economic Benefits of Relationship Lending

Economic Benefits of Relationship Lending (Frequency)	Strongly Disagree		Disagree		Agree		Strongly Agree	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Better Lending Decisions	n.a	n.a	6	6.7	52	57.8	32	35.6
Reduced Screening & Monitoring Costs	1	1.1	21	23.3	57	63.3	11	12.2
Greater Customer Satisfaction	n.a	n.a	8	8.9	50	55.6	32	35.6
Generates Additional Business	1	1.1	4	4.4	44	48.9	41	45.6
Improved Profitability of SME Loan Portfolio	2	2.2	8	8.9	45	50	35	38.9
Reduced Amount of Loan Loss Provisions	1	1.1	18	20	44	48.9	27	30
Economic Benefits of Relationship Lending (Ranking)	Min	Max	Mean	Std Dev				
Generates Additional Business	1	4	3.39	0.631				
Better Lending Decisions	2	4	3.29	0.585				
Greater Customer Satisfaction	2	4	3.27	0.614				
Improved Profitability of SME Loan Portfolio	1	4	3.26	0.712				
Reduced Amount of Loan Loss Provisions	1	4	3.08	0.738				
Reduced Screening & Monitoring Costs	1	4	2.87	0.622				
Valid N = 90								
n.a means "no score was obtained"								
All percentages (%) sum up to 100% horizontally across each rating grid								

Source: Survey of Loan Officers/RMs in Nigerian Banks

A third benefit from relationship lending is *greater customer satisfaction* (mean 3.27, sd 0.614). Since the nature of the bank-borrower relationship involves frequent and personalized contact with the borrower, it is expected that relationship-driven banks are able to offer a superior level of customer service to businesses than non-relationship lenders (Levonian and Soller, 1996). The loan officers also alluded to the fact that relationship lending has *improved the profitability of their bank's loan portfolio* (mean 3.26, sd 0.712). This is because relationship lending affords them the opportunity to monitor loans given to customers effectively. Nakamura (1994) found that loan quality seemed to be greater in relationship-driven banks as opposed to non-relationship banks. More than 75% of the Nigerian bankers also seemed to suggest that relationship lending (based on multiple interactions with SME customers over time and/or across products) has *reduced the screening and monitoring costs associated with SME loans*, consistent with findings in the literature (e.g. Diamond, 1984; Haubrick, 1989; Nakamura, 1994; Boot, 2000).

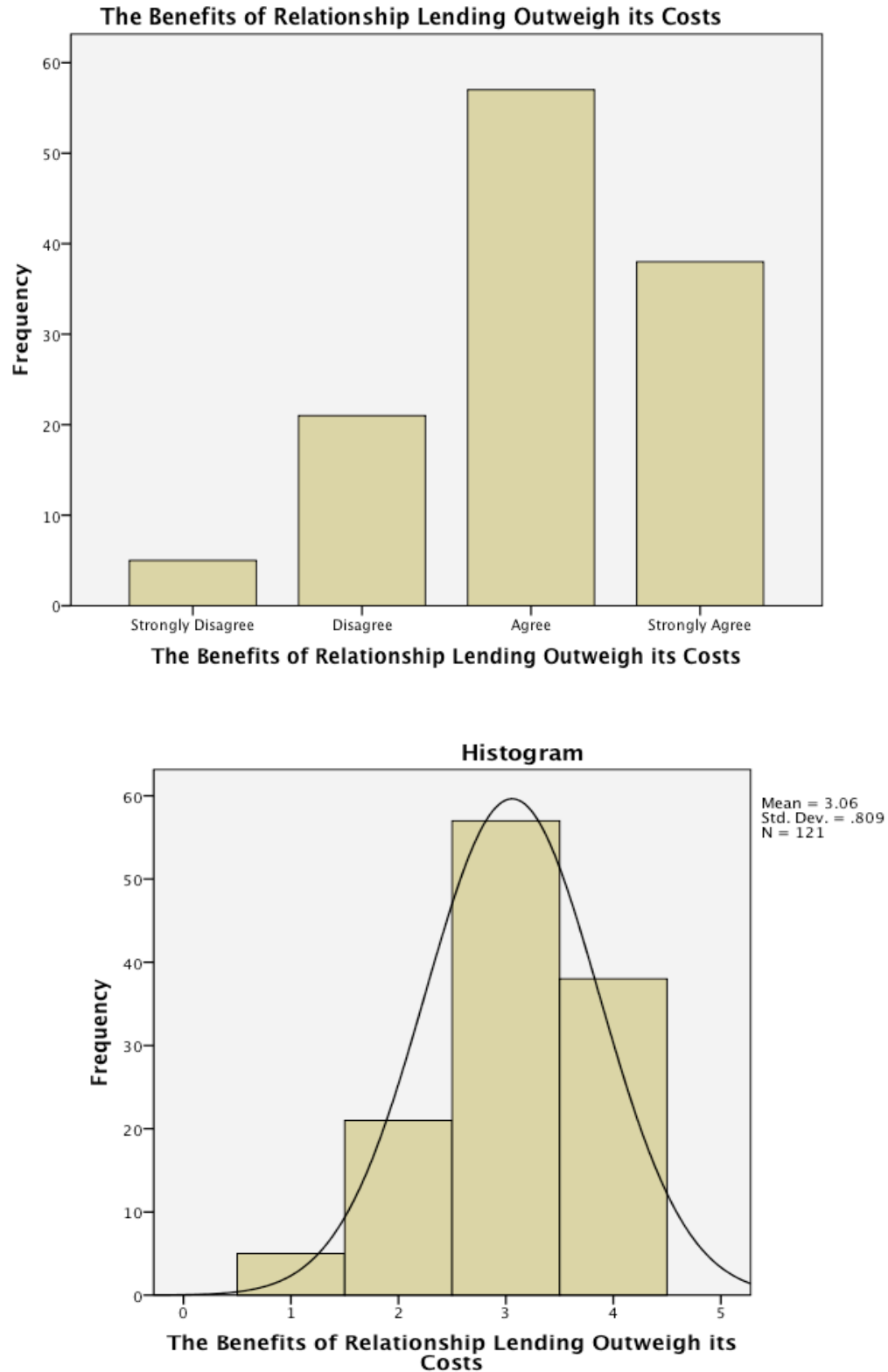
Table 7.6: Economic Costs (Downsides) of Relationship Lending

Economic Costs of Relationship Lending (Frequency)	Strongly Disagree		Disagree		Agree		Strongly Agree	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Financial Information on Borrowers is Hardly Adequate	3	2.5	32	26.4	71	58.7	15	12.4
Investing in Relationships is Not Cost-Effective	15	12.4	65	53.7	36	29.8	5	4.1
Multiple Banking Makes Rel. Lending too Competitive	16	13.2	35	28.9	54	44.6	16	13.2
Rel. Lending Results in Undue Relaxation of Credit Terms	10	8.3	45	37.2	48	39.7	18	14.9
SME Lending is Costly & Risky Hence Shift to Fee Income	12	9.9	33	27.3	55	45.5	21	17.4
Economic Costs of Relationship Lending (Ranking)	Min	Max	Mean	Std Dev				
Financial Information on Borrowers is Hardly Adequate	1	4	2.81	0.675				
SME Lending is Costly & Risky Hence Shift to Fee Income	1	4	2.7	0.872				
Rel. Lending Results in Undue Relaxation of Credit Terms	1	4	2.61	0.84				
Multiple Banking Makes Rel. Lending too Competitive	1	4	2.58	0.883				
Investing in Relationships is Not Cost-Effective	1	4	2.26	0.725				
Valid N = 121								
All percentages (%) sum up to 100% horizontally across each rating grid								

Source: Survey of Loan Officers/RMs in Nigerian Banks

Just as there are benefits of relationship lending, there are also costs or downsides associated with maintaining bank-borrower relationships in Nigeria (see table 7.6). Majority of the loan officers (77.1%) say a major downside is the fact that *financial information is hardly adequate*. SMEs in Nigeria, like in many other developing countries are informationally opaque. They do not document their business and financial propositions properly. In the theory of discouraged borrowers, where moneylenders have imperfect and asymmetric information, they are bound to make screening errors in the loan granting process (Stiglitz and Weiss, 1981; Kon and Storey, 2003; Han, Fraser and Storey, 2009). The loan officers also admit that relationship lending is costly and that building and maintaining relationships is time consuming and cost-ineffective. SMEs in Nigeria tend to have multiple bank relationships and often switch between lenders. This can reduce the value of information acquisition to any individual loan officer or lead to credit rationing as banks lose monopoly of proprietary information (Chan et al., 1986; Boot, 2000; Ongena and Smith, 2000). Moreover, as loan officers admit, more competition could discourage relationships (Berlin, 1996). An associated downside is the fact that sometimes, relationship lending results in an undue relaxation by Nigerian banks of the criteria used in evaluating loan applications (especially those made by longer-term bank customers). In many circumstances, interest rates can be too insensitive to credit risk because of loan rate smoothing over the life of a loan relationship.

Figure 7.4: Net Benefits from Relationship Lending



As figure 7.4 shows, relationship lending in Nigeria tends to yield positive net benefits since majority of respondents (78.5%) agree or strongly agree that its benefits outweigh its costs. This is consistent with the views of some authors that the added revenue associated with relationship lending exceeds the added information costs associated with evaluating and monitoring small business commercial and industrial loans (e.g. Petersen, 1999; Peek 2007; Bharath, et al., 2007). While it may be true that relationship lending yields positive net benefits for many Nigerian banks, the result may reflect the bankers' misperception of reality, as this is a subjective assessment of the value derivable from relationship lending.

7.3.3. Econometric Model

The model used in the empirical analysis is the ordinal logistic regression (OLR) model. (Please refer to Chapter 4 for a detailed description of the main procedures used in this statistical technique). The essential difference between this chapter and the model described in chapter 4 is the reduction in the number of odds from 4 to 3, since there are three scales used to rate the amount of borrower information or knowledge acquired by loan officers in Nigerian banks: 'fair' (1), 'good' (2), and 'very good' (3). The interpretation of the OLR estimates follows the account described in chapter 4. The sign of parameters shows whether the latent variable y^* increases with the regressor. A positive coefficient indicates an increased chance or likelihood that a subject with a higher score on the independent variable will be observed in a higher category. A negative coefficient indicates the chances or likelihood that a subject with a higher score on the independent variable will be observed in a lower category (Snedker et al., 2002). So for example, if we are interested in testing whether the possibility of a loan officer acquiring more soft information depends on whether or not he has authority to independently approve loans, a positive coefficient will imply that a loan officer with authority to approve loans autonomously is more likely to have higher level of knowledge of his customers' business activities, while a negative coefficient will mean that there are less chances of acquiring soft information with independent approval authority.

Model 1: Acquisition of Soft Information

Adapting the model used by Uchida et al. (2012), we can examine the central role of loan officers in relationship lending in Nigerian banks. Here, we test whether loan officer activities

and attributes affect the acquisition of soft information. We could directly test this by running the following ordinal logistic regression:

Table 7.7: Model 1: Acquisition of Soft Information

<i>KNOWLEDGE</i> = <i>f</i> (Loan Officer Lending Activities, Relationship Strength/Quality, Controls)	
Variable	Measure
Dependent Variable	
<i>Acquisition of Soft Information</i> is measured by <i>KNOWLEDGE</i>	
<i>KNOWLEDGE</i>	This variable represents how well a loan officer acquires direct knowledge of the business model and activities of his/her SME borrower (s). Banks rated their knowledge on a 3-point scale from “fair” to “very good”. This includes how well the loan officer knows the firm’s managers, owners, industry, competitors, suppliers, customers, as well as the local market or community in which the firm operates (Nakamura, 1994; Boot, 2000; Berger <i>et al</i> , 2005; Cole <i>et al</i> , 2004; Uchida, <i>et al</i> , 2012).
Loan Officer Lending Activities	
<i>Loan Officer Lending Activities</i> can be measured by the loan officer’s role in loan approval and in setting loan rates (Benvenuti <i>et al</i> , 2010). These are represented as follows:	
<i>IND_APPROVAL</i>	Dummy variable, which takes on the value of 0 if a loan officer does not have authority to independently approve SME loans and 1 if the officer has authority to approve loans autonomously.
<i>INT_DISCRETION</i>	Dummy variable, which takes on the value of 0 if a loan officer does not have any leeway in setting interest rates on SME loans, and 1 if the loan officer has some degree of discretion in determining interest rates on SME loans.
Relationship Strength/Quality	
<i>Relationship Strength/Quality</i> can be measured by the loan officer’s attributes represented by the following variables:	
<i>FREQ_MEETING[1]</i>	This variable represents how often the loan officer visits or meets with his/her SME customer (s) face to face (Berger <i>et al</i> , 2005).
<i>FREQ_COMM</i>	This variable represents how often the loan officer communicates with his/her SME customer (s) using non-physical methods such as standard mail, emails or telephone (Berger <i>et al</i> , 2005).
<i>RB_EXPERIENCE</i>	This variable represents the number of years of relationship banking experience the loan officer has. Uchida <i>et al</i> (2012) however, used loan officer’s age as a proxy for skill. In the present study, the experience of the loan officer is used to indicate the depth of his/her level expertise in interacting with SME customers and gathering soft information (Lehmann and Neuberger, 2001).
Control Variables	
<i>BANK_ID</i>	This dummy variable captures the differences between banking groups (e.g. Lehmann and Neuberger, 2001). It is a series of code numbers generated for each participating bank to measure the idiosyncratic features of each bank on the accumulation of soft information, e.g. uniqueness of their SME lending policies and business models.
<i>BANK_SIZE</i>	This variable divides the sample into 2 parts, where the variable takes on the value 2 where the loan officer works in a tier-1 bank (representing the top 5 largest banks), and 1 if the loan officer works in a tier-2 bank (representing other mid-sized banks in the sample). The literature points out that smaller banks tend to exhibit greater features of relationship lending than larger banks because they offer more retail services and can easily reach SMEs in their local communities (Nakamura, 1994; Keeton, 1995; Berger and Udell, 1995, 2003, 2006; Cole, <i>et al</i> , 2004; Berger <i>et al</i> , 2005). <i>BANK_SIZE</i> can also be used to capture the influence of bank sophistication and reputation.
<i>BRANCH_TYPE</i>	This dummy variable is the code number given to loan officers depending on whether they serve in retail or commercial branches (Dummy ‘1’ is for LOs in retail branches; Dummy ‘2’ is for LOs in commercial branches). This categorical variable could also proxy for the influence of geographical location or distance on soft information acquisition (Keeton, 1995). Suffice to say that retail branches and commercial branches are clustered together in different geographical locations, the former in less developed areas and the former in more developed urban areas.

[1] This variable was eventually dropped because it is strongly correlated with frequency of communication “FREQ-COMM”.

Model 2: Soft Information and Benefits from Relationships

In the second stage analysis of whether the accumulation of soft information is beneficial, we estimate the following equation:

Table 7.8: Model 2: Soft Information and Benefits from Relationships

Relationship Benefits to Banks = f (Acquisition of Soft Information, Access to Hard Information, Relationship Variables, Controls)	
Variable	Measure
Dependent Variables	
<i>Relationship Benefits</i> can be measured by the following:	
<i>LN_EFFICIENCY</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending allows the bank to make efficient lending decisions (i.e. enhances the ability of the bank to accommodate good borrowers and screen out bad borrowers – Petersen, 1999, Boot, 2000). Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree.
<i>REDUCED_COSTS</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending reduced screening and monitoring costs (Diamond, 1991; Petersen, 1999). Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree.
<i>CUST_SATISFACTION</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending results in greater customer satisfaction (Levonian and Soller, 1996). Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree.
<i>ADD_BUSINESS</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending often generates additional business for their bank (e.g. additional deposits, future lending business, investment banking deals, fee-based income, etc – Peek, 2007; Bharath <i>et al</i> , 2007). Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree.
<i>LN_PERFORMANCE</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending improved the profitability of their branch/bank's SME loan portfolio (Berney <i>et al</i> , 1998; Benvenuti, <i>et al</i> , 2010). Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree.
<i>LOWER_LL</i>	This variable represents the loan officers' evaluation of their bank in terms of how relationship lending has reduced the amount of their bank's/branch's loan loss provisions associated with SME lending. Categorical variables were derived using the scale (=1) strongly disagree to (=4) strongly agree
Acquisition of soft information	
<i>KNOWLEDGE</i>	As previously defined in model 1
Access to Hard Information	
<i>Access to Hard Information</i> is measured by the following variable:	
<i>FINANCIAL_INFO</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which their bank acquires information on the true financial condition of the SME borrower before granting a loan. This variable can be used to measure the adequacy/asymmetry of financial information in the underwriting process (Stiglitz and Weiss, 1981). It can also control for access to 'hard information' (Petersen, 2004; Uchida <i>et al</i> , 2012).
Relationship Variables	
<i>Relationship Variables (RV)</i> are broken down into the following:	
<i>LOAN_LIFE_RELN</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which their bank maintains a relationship with borrowers throughout the loan life. This variable can be used to represent the importance of relationship lending (Petersen and Rajan, 1994, 1995; Berger and Udell, 1995).
<i>PERSONAL_CONTACT</i>	This variable represents the loan officer's evaluation of their bank in terms of the extent to which their bank maintains personalized and frequent contact with SME customers. This variable can be used to proxy for the degree of loan monitoring carried out by loan officers (Diamond, 1991; Nakamura, 1994; Berger <i>et al</i> , 2005; Uchida, <i>et al</i> , 2012).
Control Variables	
<i>BANK_ID</i>	As previously defined in model 1
<i>BANK_SIZE</i>	As previously defined in model 1
<i>BRANCH_TYPE</i>	As previously defined in model 1

7.4. Empirical Results

7.4.1. Information Acquisition and Loan Officer Activities

The results for the estimation of model 1 are shown in columns (A) and (B) in Table 7.9. Column (A) reports the OLR results for the acquisition of soft information using *KNOWLEDGE* as the dependent variable, while column (B) estimates the marginal effects of an increase in loan officer activities and relationship strength on the probability of selecting alternative (3) – “very good” knowledge of borrower.

With respect to the key independent variables that measure loan officer activities, we find a significant and negative coefficient on *IND_APPROVAL* and a significant and negative coefficient on *INT_DISCRETION*. This implies that the level of authority loan officers have to independently approve loans and the degree of discretion they have in setting interest rates on SME loans are likely to reduce the knowledge they have of their customers’ business activities. This may be explained by the fact that most of the critical lending decisions (including loan approval decisions) in Nigerian banks are centralised, i.e. carried out at the head office. Under such circumstances, local relationship managers have no incentives to acquire soft information since they play fewer roles in lending decisions.

The marginal effects estimates (column B) predicts that a loan officer with no independent approval authority reduces his/her likelihood of acquiring “very good” knowledge of the customer by about 34.8%. Similarly, a loan officer with no margin of discretion in setting loan rates for customers is 38% less likely to acquire “very good” knowledge of his/her customers’ business model and activities. This empirical evidence confirms the hypothesis that a decentralised lending structure, characterised by autonomous lending by loan officers, reinforces the acquisition of soft information and hence allows relationship banks to effectively act as delegated monitors. The result is also consistent with findings from Benvenuti et al. (2010) that only banks that delegate more decision-making power to branch loan officers tend to increase their specialization in relationship lending to SMEs. Nigerian banks do not fall into this category since they have a mostly centralised lending structure and hence the reason for the negative signs.

Table 7.9: Model 1 Regression Results - Information Acquisition and LO Activities

(A) Ordered Logistic Regression: KNOWLEDGE Number of Observations =121 LR χ^2 (16 degrees of freedom) = 42.96 Prob > χ^2 = 0.0002 Pseudo R-Squared = 0.2190 Log likelihood = -73.112					(B) Conditional Marginal Effects: Pr (knowledge==3), predict “very good” knowledge		
Type of Variable	Variable Name	Coefficient	Std. Error	Prob	dy/dx	Std. Error	Prob
	INTERCEPT_1	-4.610	2.304	==	==	==	==
	INTERCEPT_2	0.356	2.168	==	==	==	==
LO Lending Activities	IND_APPROVAL	-3.200***	1.064	0.003	-0.348**	0.170	0.041
	INT_DISCRETION	-2.319***	0.779	0.003	-0.380***	0.134	0.005
Relationship Strength	FREQ_COMM	0.476*	0.275	0.083	0.086*	0.049	0.079
	RB_EXPERIENCE	-0.065	0.061	0.289	-0.013	0.011	0.234
Control Variables/Bank Type Dummies	BANK_SIZE	-2.577**	1.203	0.032	-0.015	0.085	0.859
	BRANCH_TYPE	0.391	0.553	0.480	0.132	0.062	0.372
	BANK_DUMMY1	3.769***	1.211	0.002	==	==	==
	BANK_DUMMY2	1.994*	1.314	0.062	==	==	==
	BANK_DUMMY3	4.570***	1.514	0.003	==	==	==
	BANK_DUMMY4	3.792***	1.290	0.003	==	==	==
	BANK_DUMMY5	(NA)	(NA)	(NA)	==	==	==
	BANK_DUMMY6	-0.289	1.079	0.789	==	==	==
	BANK_DUMMY7	-0.588	1.096	0.591	==	==	==
	BANK_DUMMY8	0.785	0.968	0.417	==	==	==
	BANK_DUMMY9	0.754	1.072	0.482	==	==	==
	BANK_DUMMY10	1.333	1.065	0.211	==	==	==
	BANK_DUMMY11	-0.579	1.102	0.599	==	==	==
	BANK_DUMMY12	(NA)	(NA)	(NA)	==	==	==
(Information Acquisition) = f (Loan officer activities, Relationship strength, Controls, Bank type dummies). Column (A) of this table shows the OLR estimation results for the determination of information acquisition. The dependent variable is ‘knowledge’, which measures information acquisition [categorical: from (=1) fair to (=3) very good]. The main independent variables are loan officer lending activities and relationship strength variables, already described in section 7.3.3. Column (B) shows the results of the conditional marginal effects predicting the marginal effect of an increase in the loan officer activities and relationship strength on the probability of selecting alternative (3) –‘very good’ knowledge of borrower. The entry “(NA)” means the variable is omitted because of collinearity * means that the coefficient is statistically significant at a 10% level ** means that the coefficient is statistically significant at a 5% level *** means that the coefficient is statistically significant at a 1% level							

The results for the other key variable on relationship strength is consistent with hypothesis 5a that loan officers acquire soft information through relationship development. A positive and significant coefficient on *FREQ_COMM* implies that the more frequently loan officers communicate with their business customers the more soft information is acquired (e.g. Boot, 2000; Berger et al., 2005). If we examine the marginal effects estimates, we observe that if communication between a loan officer and his customer increases by one frequency level (say

for example, from once a month to more than once a month), then the loan officer is 8.5% more likely to have “very good” knowledge of the borrower’s business. This result is statistically significant at 10%.

It might be worthy to note that the marginal effect of *FREQ_COMM* might be indicative of the fact that the accumulation of soft information is unlikely to be comprehensive where the loan officer only uses non-physical methods of communication (i.e. standard mails, emails and telephone). A more reliable way to garner information will be face-to-face meeting with the customer or physical observation of the customer’s business activities (Uchida et al. 2012 found frequency of meeting to be significant in Japan).

RB_EXPERIENCE is never significant at a conventional level of significance, even after controlling for its non-linearity. The result implies that if a loan officer’s relationship banking experience reflects expertise, it does not seem to be important in acquiring soft information. Uchida et al. (2012) reached a similar conclusion when they used loan officer’s age (which is a proxy for skill). Usually, a less experienced (i.e. younger) loan officer should be associated with less acquisition of soft information. However, it could also be the case that a more senior officer could have a lower incentive to collect information, or possibly even lower ability (on average), if the bank’s incentive structure is not based on merit (Uchida et al., 2012) or where the bank operates a very centralised lending policy. Thus, according to the literature, there is no clear relationship between a loan officer’s experience and expertise. In the case of Nigeria, loan officers do not possess much incentive to collect information since they do not play a major role in deciding how capital is allocated across projects.

The influence of *BANK_SIZE* on the accumulation of knowledge is significant at 5%. The negative sign shows that as banks grow in size, they are less likely to generate soft information due to their large multi-office structure and centralised lending strategy (Nakamura, 1994; Keeton, 1995; Stein, 2002). Interestingly, however, the results show that four of the Tier 1 banks (*BANK_DUMMY1*, *BANK_DUMMY2*, *BANK_DUMMY3*, and *BANK_DUMMY4*) have positive and significant coefficients, implying that their loan officers tend to have more knowledge about their customers’ business activities than other banks. A very good explanation for this is that from the survey responses, it was observed that these banks seemed to give more discretion to their loan officers in approving small size loans autonomously as well as having some leeway in determining interest rates granted to their business customers.

However, as noted earlier, their independent approval limit (in terms of loan size) is relatively small, and not all officers exercise this level of authority. Three banks (*DUMMY6*, *DUMMY7* and *DUMMY11*) tend to have a negative, though insignificant coefficient, which may be explained by the high level of centralisation of their lending functions.

The chi-square goodness of fit test ($\text{Prob} > \chi^2 = 0.0002 < 0.05$) for the overall suitability of the model shows that the model fits well and that all the coefficients in the model are different than zero. The pseudo R-squared measure of goodness of fit also shows that the predictors can explain 21.9% of the changes in the value of the dependent variable. When compared with those of other authors that used similar models (e.g. Uchida et al., 2012 who reported R-square of between 17-19% for 1,027 observations), this model does very well. However, one limitation of this model is that it was impractical to include some other key variables, which could also explain the accumulation of soft information, such as type of loan officer compensation schemes and the frequency of loan officer turnover (or mobility). The latter has been found by several studies to have a negative relationship with soft information accumulation and credit availability to SMEs (e.g. Scott, 2006; Benvenuti, et al., 2010; Uchida, et al., 2012). The reason why it is impractical to include these variables is because this information could only be obtained at the bank level (i.e. from the head office) and could not be provided by the local relationship managers and so was not included in the questionnaire.

Another major drawback of the model is the fact that the reliability of the estimates may have been compromised by the presence of collinearity, as two of the bank dummies, *BANK_DUMMY5* and *BANK_DUMMY12* are excluded from the model. This situation is also the case in model 2 (Table 7.10). As has already been alluded to in chapter 6, this outcome might be unconnected to the relatively low sample size employed by the study, which means that the distributions of the sample may be highly skewed and odds ratios may have been overestimated. The robustness tests, which use stepwise regression analysis provides further insights into the most important predictors in the model and their relative statistical power (see section 7.4.3).

7.4.2. Soft Information and Benefits from Relationship Lending

In the second stage analysis, Table 7.10 presents the OLR estimation results for the presence/absence of benefits from strong bank-borrower relationships. The dependent variable in each panel is a proxy for the benefits from bank-borrower relationship, which have been described in section 7.3.3. The main explanatory variables of interest are *KNOWLEDGE* (a measure for soft information acquisition) *FINANCIAL_INFO* (a measure for access to hard information), *LOAN_LIFE_RELN* and *PERSONAL_CONTACT* (both measuring the importance of relationships). All models control for bank size, branch type and bank identification effects.

Beginning with Model 2(A), both *FINANCIAL_INFO* and *LOAN_LIFE_RELN* have positive and significant effect on *LN_EFFICIENCY*, while *KNOWLEDGE* is insignificant. This result implies that the influence of soft information on lending efficiency is marginal. The appraisal and screening of borrowers is rather based on financial (hard) information, consistent with studies that find that large banks rely more on hard (quantitative) information on the true financial condition of the borrower (Bakker, Klapper and Udell, 2004; Berger and Udell, 2006; Kim, 2008). Nigerian banks, like most banks elsewhere, are interested in information from the borrower's financial statements and information from the valuation of collateral before they extend credit to business customers. Banks want to know the financial strength of a business using traditional financial ratios, e.g. liquidity ratios, debt and solvency ratios, asset management ratios and profitability ratios. Another explanation for the insignificance of *KNOWLEDGE* is that lending decisions in Nigerian banks are mostly done centrally so that the accumulation of soft information is less important in determining lending decisions.

In Model 2(B), *FINANCIAL_INFO* and *PERSONAL_CONTACT* impact positively and significantly on *REDUCED_COSTS*. This means that the adequacy of financial information and frequent and personalized contact with borrowers reduces screening and monitoring costs on business loans, consistent with the hypothesis that relationship lending (based on multiple interactions with SME customers over time and/or across products) results in reduced screening and monitoring costs. A number of studies have found that banks serve as delegated monitors and that enduring relationships between banks and their customers produce informational efficiencies which reduce monitoring costs and allows for repeated lending

between the intermediary and borrower (Diamond, 1984; Haubrich, 1989; Uchida et al., 2012). It should be noted however that existing evidence on this outcome is mixed.

Table 7.10: Model 2 Regression Results – Benefits from Relationship Lending

Ordered Logistic Regression (OLR): Benefits from Relationship Lending						
Variable Name	Model 2(A): LN EFFICIENCY	Model 2(B): REDUCED COST	Model 2(C): CUST SATISFACTION	Model 2(D): ADD BUSINESS	Model 2(E): LN PERFORMANCE	Model 2(F): LOWER LLP
INTERCEPT_1	Coeff: 2.5417 S.E: 3.5313	Coeff: -0.4176 S.E: 4.0274	Coeff: 17.4658 S.E: 1605.306	Coeff: 13.0003 S.E: 1809.869	Coeff: -3.9709 S.E: 3.4328	Coeff: -1.5436 S.E: 3.3875
INTERCEPT_2	Coeff: 6.7679 S.E: 3.5929	Coeff: 3.5294 S.E: 3.9363	Coeff: 21.3445 S.E: 1605.306	Coeff: 14.6907 S.E: 1809.869	Coeff: -1.9287 S.E: 3.3726	Coeff: 1.9215 S.E: 3.2663
INTERCEPT_3	= =	Coeff: 8.0505 S.E: 4.0442	= =	Coeff: 19.2099 S.E: 1809.869	Coeff: 1.5806 S.E: 3.3611	Coeff: 4.8912 S.E: 3.3113
Soft Information Acquisition:						
KNOWLEDGE	Coeff: 0.6618 Prob: 0.125	Coeff: -0.2068 Prob: 0.660	Coeff: 1.3721*** Prob: 0.003	Coeff: -0.3798 Prob: 0.455	Coeff: 0.6153 Prob: 0.164	Coeff: 0.2076 Prob: 0.632
Access to Hard Information:						
FINANCIAL_INFO	Coeff: 0.7659** Prob: 0.029	Coeff: 0.8459** Prob: 0.030	Coeff: 0.3043 Prob: 0.387	Coeff: -0.7356* Prob: 0.083	= =	= =
Relationship Variables:						
LOAN_LIFE_RELN	Coeff: 1.0261* Prob: 0.055	= =	Coeff: 0.9462* Prob: 0.063	Coeff: 1.0621* Prob: 0.088	Coeff: 2.1225*** Prob: 0.000	Coeff: 2.1029*** Prob: 0.000
PERSONAL_CONTACT	= =	Coeff: 1.0869** Prob: 0.037	= =	Coeff: -1.5266** Prob: 0.020	Coeff: -1.5483*** Prob: 0.009	Coeff: -1.4280*** Prob: 0.006
CUST_SATISFACTION	= =	= =	= =	Coeff: 2.4820*** Prob: 0.000	= =	= =
Control Variables/Bank Dummies:						
BANK_SIZE	Coeff: -2.1055 Prob: 0.273	Coeff: -0.2694 Prob: 0.896	Coeff: 14.6117 Prob: 0.993	Coeff: 14.3866 Prob: 0.994	Coeff: -2.5867 Prob: 0.141	Coeff: -0.5147 Prob: 0.749
BRANCH_TYPE	Coeff: 0.3741 Prob: 0.547	Coeff: 0.0979 Prob: 0.877	Coeff: -0.1700 Prob: 0.788	Coeff: 0.2374 Prob: 0.734	Coeff: -0.0765 Prob: 0.908	Coeff: -0.1073 Prob: 0.851
BANK_DUMMY1	Coeff: 1.2624 Prob: 0.503	Coeff: -0.9709 Prob: 0.630	Coeff: -16.6258 Prob: 0.992	Coeff: -13.6869 Prob: 0.994	Coeff: 2.4497 Prob: 0.166	Coeff: 1.8203 Prob: 0.262
BANK_DUMMY2	Coeff: 2.3901 Prob: 0.192	Coeff: -2.7962 Prob: 0.141	Coeff: -15.4857 Prob: 0.992	Coeff: -13.4544 Prob: 0.994	Coeff: 1.7294 Prob: 0.299	Coeff: 1.3555 Prob: 0.377
BANK_DUMMY3	Coeff: 0.9740 Prob: 0.621	Coeff: -1.5292 Prob: 0.450	Coeff: -17.6093 Prob: 0.991	Coeff: -14.7989 Prob: 0.993	Coeff: 1.3806 Prob: 0.427	Coeff: 0.1142 Prob: 0.943
BANK_DUMMY4	Coeff: 1.8555 Prob: 0.322	Coeff: -3.6704* Prob: 0.073	Coeff: -15.7959 Prob: 0.992	Coeff: -16.0089 Prob: 0.993	Coeff: 0.0692 Prob: 0.968	Coeff: 0.1496 Prob: 0.926
BANK_DUMMY5	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
BANK_DUMMY6	Coeff: -0.1238 Prob: 0.909	Coeff: 0.1839 Prob: 0.882	Coeff: -2.4866** Prob: 0.033	Coeff: 0.2484 Prob: 0.839	Coeff: -0.5451 Prob: 0.618	Coeff: 0.2269 Prob: 0.828
BANK_DUMMY7	Coeff: 0.5770 Prob: 0.609	Coeff: -0.9870 Prob: 0.454	Coeff: -0.8048 Prob: 0.499	Coeff: 0.8315 Prob: 0.528	Coeff: -1.3087 Prob: 0.241	Coeff: 1.7612 Prob: 0.127
BANK_DUMMY8	Coeff: -1.1683 Prob: 0.344	Coeff: 2.4854** Prob: 0.040	Coeff: -2.3820** Prob: 0.047	Coeff: 2.5155* Prob: 0.069	Coeff: 1.4423 Prob: 0.222	Coeff: 4.0439*** Prob: 0.001
BANK_DUMMY9	Coeff: 0.2201 Prob: 0.836	Coeff: -1.0666 Prob: 0.395	Coeff: -1.2138 Prob: 0.316	Coeff: 2.5155* Prob: 0.057	Coeff: 1.3102 Prob: 0.297	Coeff: 1.5819 Prob: 0.159
BANK_DUMMY10	Coeff: 0.8576 Prob: 0.471	Coeff: 0.6332 Prob: 0.622	Coeff: -1.7591 Prob: 0.147	Coeff: 2.8615** Prob: 0.045	Coeff: 1.8392 Prob: 0.160	Coeff: 2.6837** Prob: 0.021
BANK_DUMMY11	Coeff: -2.0689 Prob: 0.101	Coeff: -1.4389 Prob: 0.295	Coeff: -0.5346 Prob: 0.147	Coeff: -0.8130 Prob: 0.532	Coeff: 0.2528 Prob: 0.836	Coeff: 1.5935 Prob: 0.198
BANK_DUMMY12	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Number of Obs.	90	90	90	90	90	90
LR chi ²	27.18 (df: 15)	39.63 (df: 15)	32.41 (df: 15)	51.64 (df: 17)	40.12 (df: 15)	36.87 (df: 15)
Prob > chi ²	0.0273	0.0005	0.0057	0	0.0004	0.0013
Pseudo R ²	0.1746	0.2353	0.198	0.32	0.2199	0.1891
Log likelihood	-64.271686	-64.402619	-65.636636	-54.858645	-71.164911	-79.030501
(Benefit from Relationship Lending) = f (Accumulation of soft information, Access to hard information, Control Variables/Bank dummies). This table presents OLR estimation results for the presence/absence of benefits from strong bank-borrower relationships. The dependent variable in each panel is a proxy for the benefits from bank-borrower relationship, which have been described in section 7.3.3: LN EFFICIENCY (dummy: better lending decisions taken) in Model 2(A); REDUCED_COSTS (dummy: reduced screening and monitoring costs) in Model 2(B); CUST_SATISFACTION (dummy: generates customer satisfaction) in Model 2(C); ADD_BUSINESS (dummy: generates additional business) in Model 2(D); LN PERFORMANCE (dummy: improved performance of bank/branch's loan portfolio) in Model 2(E); LOWER_LL (dummy: lower loan loss provisions for SME loans) in Model 2(F). Categorical variables were derived from the loan officers' rating of relationship benefits for their bank: from Strongly disagree (=1) to Strongly agree (=4). The entry "(NA)" means that the relevant variable was dropped from the estimation because of collinearity.						
* means that the coefficient is statistically significant at a 10% level						
** means that the coefficient is statistically significant at a 5% level						
*** means that the coefficient is statistically significant at a 1% level						

The importance of soft information in Nigerian banks is only underscored in Model 2(C), where *KNOWLEDGE* is both positive and very significant on *CUST_SATISFACTION*. Due to the personal touch with customers, relationship lenders are able to offer a superior level of customer service than non-relationship lenders (Levonian and Soller, 1996). *LOAN_LIFE_RELN* is also positive and significant at 10%, implying that banks that maintain a relationship with borrowers throughout the loan life will be better positioned to serve customers better and meet their needs and expectations. An interesting implication of satisfying customers is that it is more likely to generate additional business opportunities for banks (see Model 2(D) - *CUST_SATISFACTION* impacts positively and very significantly on *ADD_BUSINESS* at the 1% level, confirming the hypothesis that relationship lending by banks results in greater customer satisfaction derived from offering superior services to customers, which in turn produces repeat business for the bank. As noted earlier in section 7.3.2, Nigerian banks net huge income from fee and commission-based transactions. This performance seems to be significantly connected to the level of satisfaction customers derive from relationships with their Nigerian banks, among other factors (*FINANCIAL_INFO*, *LOAN_LIFE_RELN*, and *PERSONAL_CONTACT*). This result is consistent with recent empirical studies by Bharath et al. (2007) and Peek (2007) which show that the benefits accruing to banks from investing in lending relationships are not limited to the additional interest income they are likely to earn from the private information they have of their borrowers. Using valuable customer information, banks often cross sell financial products and services to customers such as additional loans, equity underwriting deals, cash management services, payroll processing, financial advisory services and other fee earning services.

Notice that *FINANCIAL_INFO* and *PERSONAL_CONTACT* both have a negative impact on *CUST_SATISFACTION*. This may be connected to the finding that lenders believe that financial information garnered on their business customers is hardly adequate and hence could lead to the rejection of credit requests. In addition, customers often dislike being spied upon (or constantly being monitored) by the bank for fear of losing sensitive proprietary information to competitors. For example, Shane and Cable (2002) report that entrepreneurs may decline from providing detailed information to bankers on their business prospects/plans for fear that such disclosure may compromise their intellectual property, or result in piracy. Under these circumstances, there is a higher likelihood that such customers would be dissatisfied by the rejection of credit requests due to inadequate financial information and the

risk of espionage arising from too frequent personal contacts. It is also worthy of mention that the impact of customer satisfaction on the probability of additional business is huge as the pseudo R-squared reduces from 32% to 19.48% with the removal of *CUST_SATISFACTION* alone.

In Model 2(E) and 2(F), *LOAN_LIFE_RELN* has a positive and very significant impact on *LN_PERFORMANCE* and *LOWER_LL* respectively at the 1% level in both panels, confirming the hypothesis that relationship lending improves loan profitability and results in better loan quality. This is also consistent with findings from Carter, McNulty and Verbrugge (2004) that relationship lenders earn higher risk-adjusted yields on SME loans than non-relationship lenders. In Nigeria, most banks' non-performing loan ratios as a proportion of total loans seem to be very low (at between 3% - 4% on the average). As noted in chapter 5, Nigerian banks are generally risk-averse and would only lend to businesses that reassure them of a greater likelihood of paying back the loans extended to them.

7.4.3. Robustness Checks

To test the quality of predictors in the empirical models used in this chapter, the stepwise regression procedure was employed to determine the most important predictors of information acquisition and relationship benefits in Nigerian banks. As noted in chapter 4, the stepwise regression is a multiple regression procedure that is used to determine the best combination of independent (predictor) variables that would predict the dependent (predicted) variable (see chapter 4 for a detailed explanation of the procedure).

Appendix 7.1 shows the results of the stepwise procedure for the predictors of information acquisition. The dependent (or predicted) variable is *KNOWLEDGE*, while the independent variables (or predictors) are the variables used in model 1. The model was estimated in four steps. At the end of step 4, two bank dummies - *BANK_DUMMY10* and *BANK_DUMMY5*, entered into the regression equation along with *INT_DISCRETION* and *IND_APPROVAL*, the two variables of interest introduced to account for loan officer activities. These four variables are significantly related to *KNOWLEDGE* at least at 5% level of statistical significance. The R-square for all four predictors (model 4) was 0.189, indicating that approximately 18.9% of the variance of *KNOWLEDGE* could be accounted for by these four variables. The results of

the stepwise analysis confirms the original OLR results, which show that the two variables of interest, discretion in setting interest rates and autonomous approval of loans by loan officers are statistically significant in predicting the acquisition of soft information, further validating the hypothesis that a decentralized lending structure characterized autonomous lending by loan officers reinforces the accumulation of soft information. In other words, in banks or bank branches where loan officers have some degree of authority in taking lending decisions, the acquisition of borrower information is more efficient than in banks or branches that operate a fully centralized loan administration policy. However, the stepwise procedure excluded some of the predictors of information acquisition that were previously significant, such as *FREQ_COMM* and *BANK_SIZE*. This is one of the criticisms of the procedure, i.e. the fact that it excludes some important predictors in a model.

Appendix 7.2 shows the results of the stepwise procedure for one of the dominant benefits of relationship lending, which is additional business (*ADD_BUSINESS*). The model was estimated in three steps, and at the end of step 3, three variables, *BANK_DUMMY5*, *BANK_DUMMY4* and *CUST_SATISFACTION* entered the regression in that order of importance and are jointly significant ($F = 9.681$, $\text{sig} = 0.000$), accounting for 25.2% of perceived changes in *ADD_BUSINESS*. This result seems to confirm the earlier finding that customer satisfaction from relationship lending is likely to generate repeat business for the bank over the life of a lending relationship. However, other previously significant predictors of additional business, e.g. *FINANCIAL_INFO*, *LOAN_LIFE_RELN* and *PERSONAL_CONTACT* have been excluded from the model.

7.5. Chapter Conclusions

This chapter takes a look at the administrative structure of lending decision-making in Nigerian banks and the acquisition of soft information by loan officers/relationship managers. It also examines the economic value of relationship lending to Nigerian banks in terms of the benefits and costs of relationship lending. Findings from this chapter reveal that critical lending functions in Nigerian banks such as loan approval and risk management are mostly centralised, while loan appraisal decisions are mostly done in two stages: first at the branches, and then at the head office, before loan approval decisions are taken. The empirical analysis

shows that the benefits of relationship lending in Nigerian banks are driven largely by the accumulation of financial (hard) information on customers, longer bank-borrower relationships, frequent and personalized contact with SMEs and the customer satisfaction derived over the life of loan relationships. The relative insignificance of soft information accumulation by loan officers in loan underwriting is due to the high level of centralisation of critical lending decisions, a result that is consistent with the empirical literature that large banks are disadvantaged in the area of generating and processing soft information and tend to rely more on the use of hard (quantitative) information. This study also reveals that a major purpose for acquiring soft information is to help loan officers offer superior customer service to their business customers. The satisfaction then derived from such services in turn increases the likelihood of generating additional business for their bank over the life of such customer relationships.

CHAPTER 8

GENERAL CONCLUSIONS AND POLICY IMPLICATIONS

8.1. General Conclusions

This thesis has attempted to answer three major research questions on bank lending to SMEs in Nigeria using contemporary SME banking theories. The study has examined: (1) the demand and supply side constraints to bank involvement with SMEs in Nigeria (2) the determinants of risk premium and collateralisation in Nigerian banks, and (3) the acquisition of soft information by loan officers in Nigerian banks and the economic value derivable from relationship lending. This section summarises the key findings and conclusions from the thesis under the following five headings:

(1) The Effect of Bank Consolidation on SME lending and the Role of Government

The Nigerian banking sector has faced a number of significant changes since 2004, namely the consolidation of banks and the emergence of relatively large, well-capitalized banks that are leading on the African continent and among the world's top 1000 banks. Though Nigerian banks are now robust and well capitalized, with an aggregate balance sheet size in excess of ₦22 trillion (~£90 billion), the post- consolidated banking sector is still marked by a significant funding gap⁵⁴ for SMEs, valued at ₦3.6 trillion (~£14.4 billion) using estimates from 2006 to 2012. From the findings of this study, Nigerian SMEs like SMEs in other Sub-Saharan African countries still have little access to bank finance, which thus hampers their emergence and eventual growth.

Nigeria's private sector consists of mostly informal micro-enterprises, operating alongside large firms. About 98% of MSMEs in Nigeria are micro-enterprises (Ketley 2012). Most companies are small because the private sector is new and because of legal and financial obstacles to capital accumulation. Thus between these large and small firms, SMEs are very scarce and constitute the "missing middle". While microenterprises are catered for by the informal financial sector and partly by the formal financial sector through microfinance banks (MFBs), commercial banks have generally reduced lending to SMEs and have increased focus

⁵⁴ In Sub-Saharan Africa, the funding gap within the SME segment is estimated at anything between US\$100 billion to US\$200 billion (see Oyeboade, 2014)

on lending to large corporates in order to optimise returns to their shareholders. Notwithstanding all the efforts of the Federal Government of Nigeria and other stakeholders in the banking industry to make it easier for SMEs to access bank loans, majority of 17.6 million MSMEs in Nigeria are either excluded or still appeared to find it difficult to meet the requirements for obtaining bank loans. The withdrawal of the compulsory 20% allocation of total domestic credit to the SME sector by the government in 1996 precipitated a drastic reduction in bank lending to SMEs, measured by the proportion of commercial banks' total loan portfolio that is accounted for by SMEs.

(2) Demand-Side Constraints and Market Failures

Banks in Nigeria generally lend only between 5-7% of their total loan portfolio to SMEs, on the average. In appraising a loan proposition, loan officers admit that the *purpose of a loan*, the *profitability of a business* and the *availability of fixed collateral* are the most important factors considered. Other important borrower factors include the *borrowers' credit standing* and the *stability of the demand* for their products. Findings also show that the lending model of Nigerian banks does not emphasise the role of bank-borrower relationships in determining the decision to approve or reject a loan as most lending decisions are taken at the centre. Nigerian banks also ranked the *high incidence of diversion of funds*, *weak management capacity* and *the inability of SMEs to service debts* as chief contributory factors to the riskiness of SME loans. According to the lenders, low-end borrowers often diverted funds meant to finance working capital or other projects into personal uses, which when coupled with huge operational costs of doing business in Nigeria, affects their inability to pay back loans due.

(3) Supply Side Constraints

Apart from demand side factors, there are also supply-side considerations, which affect the inclination or willingness of banks to lend to SMEs. Here, the main categories are *bank-level or institutional factors* and *external or environmental factors*.

(a) Bank-Level Factors

With respect to idiosyncratic (bank-level) factors, lenders believe that the *high transaction costs* associated with processing, monitoring and reviewing SME loans impact negatively on the profitability of SME loans. This problem is further encouraged by the *inadequacy of*

information on borrowers' financial condition due to poor credit record data and proprietary issues on the part of borrowers. This information asymmetry contributes to the reason Nigerians banks charge higher risk premiums for certain SME loans in comparison with larger corporates who enjoy the prime-lending rate (PLR). The *level of bank deposits and overall financial stability* of the lenders are other supply-side factors that impact on the decision to approve or reject an SME loan proposition. There is evidence to suggest that Tier 1 banks in Nigeria enjoy relatively lower cost of funds and relatively greater access to cheap deposits than their Tier 2 counterparts due to their reputation for safety and wider branch networks.

(b) Constraints Posed by Regulation and the Business Environment

The *influence of regulatory requirements, bank's lending policies toward SMEs* and the *risk profile of the SME sector* were regarded as the most important supply side factors in approving or rejecting a loan. There is evidence to suggest that regulatory requirements and monetary policies in Nigeria have affected banks' lending policies towards SMEs. For example, the recent increase in cash reserve requirement from 50% to 75% and liquidity ratio on private sector deposits from 15% to 12% have affected the availability of loanable funds to the private sector and by implication, to SMEs. Moreover, recent rise in *yield on competing assets*, such as government treasury bills, has led to the crowding out of private sector lending as Nigerian banks hold a sizeable proportion of their assets in relatively safer government securities, which tends to lower their appetite for lending to SMEs. Findings from this study show that SME loan approval decisions are mostly *rule-based* and often driven by the *lenders' risk appetite*, which in turn is affected by a number of factors, including the quality of the lenders' portfolio, previous history of SME loan performance, the risk profile of the borrower or borrower's sector, government's borrowing and directed lending policies and general macroeconomic and financial conditions. This finding further supports the Post Keynesian view that lending is driven by the bank's risk appetite and not just the cost of funds.

The risk profile of the SME sector is further enhanced by a number of factors, including *poor information economics* and inefficient credit referencing on business loans; *inability to enforce loans contracts* due to legal and judicial constraints; *unfavourable macroeconomic conditions* (namely high inflation, unemployment and exchange rate volatility) as well as *infrastructural constraints* such as inadequate power supply and poor access to good roads, which further exacerbate operational costs of SMEs. Surprisingly, the recent global financial crisis did not

cause a reduction in the volume of loans given to private sector, and by implication, SMEs. However, when the ratio of SME loans to total loans is examined, it can be safely concluded that SME loans have risen at a much slower rate than the growth in aggregate loans to the economy.

(4) Features of Bank Lending Facilities and Loan Contracts Determination

Findings from the survey reveal that Nigerian banks seem to be risk averse to SMEs and would only lend to borrowers that have characteristics that reassure them of their ability to repay a loan. An observation of the features of commercial banks' lending facilities reveals that Nigerian banks seem to be risk averse to new business customers, only offering facilities to either customers who have deposit or loan relationships with them or trading partners of their large corporate customers. SMEs are often advised to open corporate accounts in banks that offer the kind of facilities that relate to their kind of business. Nigerian banks also seem to have a preference for short-term lending, offering facilities for an average tenor of 12 months, with term loans not exceeding 3 years in most banks and interest rates hovering between 18-32% depending on the borrower's credit quality, the lender's cost of funds or loan commitments between the bank and the borrower.

Findings from the descriptive and empirical analysis show that the determinants of risk premium on SME loans are largely connected with factors that underline the opacity and riskiness of SMEs in Nigeria, and are less connected with lender factors such as cost of funds and administrative expenses associated with loan appraisal and disbursement. The predominant reasons why Nigerian banks charge higher risk premium on SME loans are linked with SMEs' susceptibility to failure and changes in the external environment. Relationships also play a role in determining risk premiums. In most Nigerian banks, customers with longer relationships with the bank (i.e. repeat customers) tend to benefit from lower interest rates. Though not much evidence was available to support interest rate smoothing among the sample of loan officers, the empirical results show that it is significantly related to the likelihood of lower risk premium on SME loans in Nigeria.

The determinants of collateral usage vary from bank to bank and are likely to be connected to the type of the lender, the specialization of the lender, the type of lending technology used and other differences in the business model of banks. However, the likelihood that banks will

request collateral is also influenced by borrower characteristics such as the firm's age, firm size and the risk of loan diversion. Loan size, firm size and borrowers' credit rating are also significant factors that determine the probability that a bank will request full or partial collateralisation. The descriptive analysis shows that real estate and cash-backed assets are the most accepted forms of collateral used in Nigerian banks today, while movable assets are less patronised because of the legal and financial constraints that come with their use.

(5) Features of Relationship Lending and Soft Information Acquisition

A review of the administrative structure of lending decision-making in Nigerian banks shows that critical lending functions such as loan approval and risk management are mostly centralised, while loan appraisal decisions are mostly done in two stages: first at the branches, and then at the head office, before loan approval decisions are taken. The empirical results show that the benefits of relationship lending in Nigerian banks are driven largely by the accumulation of financial (hard) information on customers, longer bank-borrower relationships, frequent and personalised contact with SMEs and the customer satisfaction derived over the life of loan relationships. The findings also show that the accumulation of soft information by loan officers is constrained by the high level of centralisation of critical lending decisions, a result that is consistent with the empirical literature that large banks are disadvantaged in the area of generating and processing soft information and tend to rely more on the use of hard (quantitative) information. This study also reveals that a major purpose for acquiring soft information in Nigerian banks is to help loan officers offer superior customer service to their business customers. The satisfaction then derived from such services in turn increases the likelihood of generating additional business for their bank over the life of such customer relationships.

8.2. Policy Implications of Findings for Nigerian Banks and Regulators

The overall finding from this study reveals that, despite the huge potential benefits from relationship lending in terms of possibility of additional business and other cross-selling opportunities, Nigerian banks have continued to reduce their proportion of assets in SME loans. This is perhaps due to the changing structure of global banking, which has been particularly marked by the shift away from traditional banking to investment banking and fee

based financial services. In addition, Nigerian banks tend to compete for large corporate borrowers, while exploiting SMEs. They seem not to be really interested in lending to SMEs, and therefore charge them high rates (rates that are far above the prime-lending rate - PLR) in order to make as much money as possible knowing that there is no bank competition for SMEs. Thus, if Nigeria is to experience sustainable growth of the SME segment, both Nigerian banks and the government have a role to play in improving SMEs access to bank finance at affordable rates as well as in ensuring the SME segment is well-served. This study thus offers the following policy suggestions for Nigerian bankers and regulators to help tackle the financing problems of SMEs in Nigeria.

8.2.1. The Role of Nigerian Banks

Given the informational opacity of Nigerian SMEs and the risk profile of the SME sector, there is evidence to suggest that if Nigerian banks focus on the development of effective risk management techniques and business models, it will help to improve access to bank finance for deserving SMEs.

Strengthening the Relationship Banking Model

Findings from chapter 7 show that because Nigerian banks have more centralized lending structures, they often discount the role of relationships in making loan approval decisions, a feature that is consistent with many large multi-office banks. Bank-borrower relationships are not as important in deciding whether to approve or reject an SME loan as they are important in taking decisions on credit terms (e.g. interest rates). As a starting point, it will be beneficial for Nigerian banks to strengthen their relationship-banking model. The effectiveness of relationship banking can be seen in terms of a range of outcomes such as informed lending decisions and customer satisfaction, which further leads to greater chances of securing additional business opportunities. Better lending decisions also improves loan quality, loan performance and ultimately greater return to shareholders' equity. With 17.6 million MSMEs in Nigeria, the MSME sector represents an important growth potential for the economy and a huge opportunity for commercial banks. There is evidence to suggest that if banks can adopt a more client-centred strategy and shift their focus from "product-push" to "customer-pull", they will remain competitive in the SME lending markets (see Accenture, 2011). Today's SMEs

want many things: more appropriate and innovative financial services; sound, commercially-aware advice, not just on products and services, but also wider business issues; and more tailored and responsive multi-channel banking. By driving a more customer-centred strategy, through product, service and channel design, harnessing the power of new technology and learning from other industries, banks can deliver all of these services and more.

Developing Judgmental Score Cards

One of the major supply-side factors affecting loan availability to Nigerian SMEs is the high transaction costs incurred by lenders on small loans. As a way of reducing transaction costs on small loans, Nigerian banks can develop judgmental scoring tools so that they are able to make SME loan underwriting more cost-effective and so that they will also be able to customise customer information to specific local economic and lender conditions. As reviewed in chapter 2, the use of simple judgmental scorecard that evaluates a mix of financial and non-financial factors has been found to be the most appropriate way to appraise a large amount of SME loans (Caire, 2004). Until third-party information infrastructure develops fully in Nigeria, Nigerian banks may need to mine their own institutional knowledge and historical portfolio data to develop scorecards that suit its strategies for the SME market segment. It will be more sensible for Nigerian banks to begin to develop credit-scoring models that utilize judgmental scorecards to predict loan defaults. If Nigerian banks can combine both financial and non-financial information about SMEs, the default prediction models for SME loans will be more comprehensive and will have a higher chance of being more accurate than if only financial information was taken into consideration.

Use of Psychometric Tests

As reviewed in chapter 2 and 3, the introduction of non-collateral loans based on the use of psychometric lending models in some Nigerian banks (such as Stanbic IBTC Bank and First Bank) is a good development for Nigerian banking. As in the case of First Bank and Stanbic IBTC, SMEs are asked to provide a detailed business plan and repayment plan and then appraisal is done on the merits of the outcome of the psychometric test. Loans offered on the basis of psychometric tests are quick (usually within 72 hours turnaround time) and with minimal documentation and hassle (Oyebode, 2014).

Use of Movable Collateral

One of the findings of this study is that Nigerian banks often emphasise a lot on the use of fixed collateral such as real estate as the primary tool for mitigating moral hazard problems. It will, however, be more beneficial to place more emphasis on the use of movable collateral as supplemental sources of repayment as is the case in many developed credit markets. For working capital financing, banks can use short-term assets such as accounts receivable and inventory, while the use of business equipment can be restricted to long term financing. Asset based lending will help solve the informational opacity problem of Nigerian SMEs by shifting the underwriting criteria from a comprehensive evaluation of a firm's risk profile to a specific evaluation of a sub-set of the firm's assets – specifically the tangible assets of accounts receivable, inventory and equipment (see Berger and Udell, 2006). In order to make it easy to secure loans with movable property, the Nigerian government will have to implement a number of legal reforms to address the impediments to the use of movable collateral (see improving the legal, judicial and bankruptcy environment under the role of government in section 8.2.2 below).

8.2.2. The Role of the Nigerian Government

The Nigerian government has been playing an important role in supporting the SME sector and should continue to do so, particularly where there is market failure or where incomplete markets inhibit the provision of adequate financing on terms suitable for the SME's stage of development. Government measures to promote bank finance for SMEs should be carefully focused, aimed at making markets work efficiently and at providing incentives for banks to assume an active role in SME finance. If the CBN is able to measure the size of the SME financing gap from time to time and evaluate the impact of government actions, it can more readily assess the success of bank lending to SMEs and the impact of government financing programmes. The findings from this study suggest that the number of beneficiaries from government SME financing programmes is still inadequate. It will thus be appropriate for the government to act to improve awareness among entrepreneurs of the range of financing options available to them from government, international financial institutions, private

investors and banks. Micro-credit and micro-finance schemes play an important role in developing countries and efforts should be made to boost their effectiveness and diffusion.

Building Capacity and Addressing Infrastructural Bottlenecks

According to the Head of SME banking in Stanbic IBTC Bank, Mr Akintunde Oyeboode, two key factors constraining the contribution of the SME sector to the Nigerian economy are the lack of capacity and infrastructural challenges (Oyeboode, 2014). In other emerging markets across Asia, Africa and the Middle East, SMEs grow at almost twice the growth rate of the GDP but the reverse is the case with Nigeria because of these two challenges. According to the findings from this study, banks rate “weak management capacity” or “incompetence” on the part of SME owners/managers among the top three most important contributory factors to the riskiness of SME loans in Nigeria alongside “high incidence of loan diversion” and “inability to service debts”. Thus both government and banks will need to cooperate to build capacity in the SME sector. According to the Stanbic-IBTC official, lenders should identify that finance must be supported with the right level of technical assistance. The most successful lending models are usually those backed by the right level of technical assistance to ensure the borrowers maximize the funding provided. If government is able to provide more technical assistance in addition to increasing access to finance via intervention funds and guarantee schemes, this will aid the effective utilisation of loans and hence promote better loan performance.

The current CBN initiative of establishing Entrepreneurship Development Centres (EDCs) should be encouraged in order to educate and train young entrepreneurs on how to manage their business profitably as well as how to access available SME development funds. The offer of technical assistance to SMEs by SMEDAN is also necessary to improve business methods, enhance corporate governance and monitoring and reduce SME failure rates. There is also an urgent need for the Nigerian authorities to address the infrastructural bottlenecks that drive up operational costs for businesses in Nigeria. Public Private Partnerships (PPP) offers a very effective vehicle to develop infrastructure to boost SMEs. In line with the Federal Government of Nigeria’s Vision 20:2020 document on SMEs, PPPs can be used as a model to develop industrial parks, entrepreneurship centres and incubators to boost the development of SMEs. By using this model, government can free its finances for social and capital intensive infrastructure like education, health, power and transport.

Improving the Lending Infrastructure

Following findings in chapter 3 and 5, there is evidence to suggest that the lending infrastructure, particularly regulatory and legal constraints have affected Nigerian banks' lending policies towards SMEs as it limits the inclination and capacity of banks to support the real sector. On the one hand, regulatory requirements such as capital adequacy, liquidity ratio, reserve requirements, and the central bank's monetary policy rates influence the amount (volume) and cost of funds that can be intermediated by banks. On the other hand, the information environment and legal/judicial factors affecting debt contract enforcement also aggravate the risk profile of the SME sector. Thus a major role of the Nigerian government is to improve the lending infrastructure since it affects the availability of credit to SMEs. As noted earlier in the literature chapter, the lending infrastructure may directly affect the availability of credit to SMEs and the extent to which the different lending technologies may be legally and profitably employed. The Nigerian government thus needs to improve the information environment, the legal and judicial environment as well as the tax and regulatory regime.

(a) Improving the Economics of Information: As the findings have revealed SMEs in Nigeria do not keep adequate accounting records and as such are unable to satisfy the requirements of Nigerian banks who rely very much on financial (hard) information in making informed lending decisions. The key issues here are strengthening the accounting standards and making sure that regulation promotes the use of credible independent accounting firms. These are necessary conditions for informative financial statements. These are also necessary conditions for the feasibility of many components of loan contracting. For example, financial covenants are not feasible if the financial ratios calculated from bank financial statements are not reliable. The CBN regulation, which stipulates that commercial banks should publish their interest rates online, is also a welcome development. This will help bank-dependent borrowers to make informed decisions about which banks offer the most competitive rates.

Another important aspect of the information infrastructure is the availability of information on payment performance. More efforts should be made to strengthen the reliability and transparency of the current credit information service providers in Nigeria, like CRC credit bureau, CR service credit bureau and XDS credit bureau, among others. The recent

introduction of the Bank Verification Number (BVN) where each bank customer is given a unique identity that can be verified across the banking industry is also a step in the right direction. This would ensure, among other things, that defaulters and blacklisted customers are easily traced and hunted.

(b) Improving the Legal, Judicial and Bankruptcy Environment: The reform of Nigerian commercial and financial laws is important in order to enable banks to deploy specific contracting elements (such as covenants, maturity, collateral and personal guarantees) to mitigate the problem of information opacity of SMEs. Since Nigerian banks currently use real estate as the main tool for collateral, the possession of a valid and verifiable title is fundamental to its use. Government should check land administration practices that make land-titling process difficult, as ineffective processes are detrimental to bank lending and business expansion (Nwuba, et al., 2013). Policy measures aimed at improving the efficiency operations of land registries, especially the granting of statutory rights of occupancy will generate growth and interest in secured credit transaction. A recent survey conducted by the World Bank in 2013 on doing business in Nigeria⁵⁵ reveals that the Nigerian law currently permits the use of movable assets and that financial institutions accept such assets as collateral. The law also allows businesses to grant a non-possessory security right in substantially all of its assets (including movable assets), without requiring a specific description of collateral. There are no public registries in Nigeria. The 2013 World Bank Survey also shows that secured creditors are paid first (before tax claims and employee claims) only when the debtor defaults outside an insolvency procedure, but not when a business is liquidated.

(c) Improving the Tax and Regulatory Environment: Nigerian policy makers need to ensure that the tax system does not inadvertently place SMEs at a disadvantage. The legal, tax and regulatory framework should also be reviewed to ensure that it encourages the development of SMEs. Where the government has assigned certain projects to contractors, it should also ensure that it pays them promptly after the execution of such projects, since public contracts are vital to the financial security of these firms. It will also be helpful to reduce the cost of doing business in Nigeria. For example, taxation of small businesses can be kept at a

⁵⁵ <http://www.doingbusiness.org/data/exploreeconomies/nigeria/getting-credit> (Accessed 28/09/2014)

minimum and should not be duplicated; manufacturers and agriculture importers can also be given import duty waivers or incentives.

There should also be a balance between regulation and competition. The CBN should check that it does not stifle competition and profitability of banks with too much regulation, without considering the impact it will have on credit extension to SMEs. For example, conventional banking theory shows that increases in the cash reserve ratio and liquidity ratios of banks do impact negatively on the creation of credit by respectively reducing the amount of deposits available to the public as loanable funds and the proportion of a bank's total assets that are invested in government securities at the expense of illiquid loans. It will also be appropriate for the CBN to make changes to monetary policy stance, where rates offered on government securities such as treasury bills and other monetary instruments are priced appropriately in line with market realities in order to discourage banks from adopting a "flight to safety" investment model and thus encourage more commercial lending to SMEs.

8.3. Future Research Agenda

Though this study has been very insightful and significant in understanding the lending policies, practices and business model of Nigerian banks in connection with SMEs, there is still room for further research and analysis on SME lending in Nigeria, and perhaps in Sub-Saharan Africa where government institutions and regulatory factors play a huge role in determining the structure and cost of lending. In addition to surveying banks, it would also be beneficial to survey small businesses and collect data on their business operations, profitability, balance sheet and their use of credit. These would help to model the credit risk of SMEs better and corroborate findings from the supply side. It would also be appropriate to collect actual historical loan-level data on lines of credit granted by Nigerian banks to SMEs where possible. This will not only assist to model banks' risk management practices more accurately but will also make it easier to disentangle the effects of (one-off) transactions lending from relationship lending, which is measured over time. It would also be helpful to investigate the lending infrastructure of banks more closely, with specific reference to the information environment, the legal and judicial environment and the tax and regulatory

environment as outlined in Berger and Udell (2006). This will help to x-ray the underlying business environment problems constraining SME financing in Nigeria.

One area that is still under-researched is the role of microfinance banks in lending to MSMEs in Nigeria. Since over 98% of MSMEs in Nigeria belong to the micro-lending subsector (i.e. the lowest end of the MSME market segment), it will be interesting to investigate the microstructure of MSME lending by microfinance banks (as well as other alternative providers of funds to SMEs, such as development banks and finance companies) and perhaps compare their lending practices and business model to those of large commercial banks (as seen in the influential study by Cole et al., 2004). This will help to measure the impact of lender size on banks' SME lending business model even more effectively.

Another development in SME lending that is worth investigating particularly for advanced credit markets (like USA and UK) is the rise of alternative finance intermediaries in the wake of the financial crisis due to SMEs' reduced access to credit from traditional banks. The ongoing debate about disintermediation and the future relevance of traditional financial intermediaries fuelled by the increasing role of online lending platforms will be worth studying. It will thus be interesting to investigate what implications the growth of online P2P platforms have for competition for SME loans against traditional bank intermediaries as well as the differences in the lending model of P2P lenders *vis-à-vis* traditional banks as they seek to create economic value for both borrowers and investors.

APPENDIX 5.1: Frequency Table on the Importance of Borrower Characteristics in SME Loan Decision Making in Nigerian Banks

Borrower Characteristics	Unimportant		Moderately Important		Important		Very Important	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Purpose of Loan	3	2.5	n.a	n.a	12	9.9	106	87.6
Loan Amount	5	4.1	12	9.9	46	38.0	58	47.9
Loan Security	7	5.8	4	3.3	38	31.4	72	59.5
Presentation of Business Plan	2	1.7	17	14	43	35.5	59	48.8
Profitability of Business	n.a	n.a	5	4.1	42	34.7	74	61.2
Firm's Size	5	4.1	36	29.8	59	48.8	21	17.4
Firm's Age	6	5	29	24	66	54.5	20	16.5
Firm's Transparency	14	11.6	36	29.8	32	26.4	39	32.2
Firm's Leverage	3	2.5	15	12.4	44	36.4	59	48.8
Firm's Organizational Form	11	9.1	33	27.3	49	40.5	28	23.1
Firm's Liquidity	3	2.5	23	19	55	45.5	40	33.1
Firm's Sector of Activity	4	3.3	15	12.4	54	44.6	48	39.7
Firm's Credit Rating	5	4.1	10	8.3	33	27.3	73	60.3
Stability of Demand for Firm's Products	n.a	n.a	6	5	68	56.2	47	38.8
Existence of Deposit Relationship	11	9.1	30	24.8	45	37.2	35	28.9
Firm's Deposit Account Balance	17	14	52	43	30	24.8	22	18.2
Existence of Loan Relationship	14	11.6	34	28.1	48	39.7	25	20.7
Existence of Fin Mgt Service Relationship	24	19.8	45	37.2	39	32.2	13	10.7
Length of Relationship with Bank	16	13.2	52	43	34	28.1	19	15.7
Exclusivity of Relationship	36	29.8	31	25.6	32	26.4	22	18.2
Distance to SME Customer	36	29.8	43	35.5	35	28.9	7	5.8
Physical Observation of Business	1	0.8	35	28.9	55	45.5	30	24.8
Owners' Credit Rating	4	3.3	5	4.1	50	41.3	62	51.2
Owners' Educational Attainment	28	23.1	45	37.2	40	33.1	8	6.6
Owners' Business Experience	n.a	n.a	18	14.9	57	47.1	46	38
Owners' Personal Guarantee	1	0.8	21	17.4	46	38	53	43.8
Owners' Personal Wealth	12	9.9	47	38.8	49	40.5	13	10.7
Owners' Equity Stake	7	5.8	14	11.6	47	38.8	53	43.8
Valid N = 121								
n.a means "no score was obtained"								
All percentages (%) sum up to 100% horizontally across each rating grid								

Source: Questionnaire survey of relationship managers/loan officers in Nigerian banks

APPENDIX 5.2: Differences in Means of Borrower Factors by Branch Type

	Branch Type	N	Mean	Std. Deviation	Std. Error Mean
Purpose of Loan	Retail Branches	56	3.84	0.496	0.066
	Commercial Branches	65	3.82	0.583	0.072
Loan Amount	Retail Branches	56	3.32	0.765	0.102
	Commercial Branches	65	3.28	0.857	0.106
Loan Security	Retail Branches	56	3.34	0.92	0.123
	Commercial Branches	65	3.54	0.709	0.088
Presentation of Business Plan	Retail Branches	56	3.2	0.796	0.106
	Commercial Branches	65	3.42	0.748	0.093
Profitability of Business	Retail Branches	56	3.52	0.632	0.084
	Commercial Branches	65	3.62	0.521	0.065
Firm's Size	Retail Branches	56	2.66	0.837	0.112
	Commercial Branches	65	2.91	0.701	0.087
Firm's Age	Retail Branches	56	2.8	0.773	0.103
	Commercial Branches	65	2.85	0.755	0.094
Firm's Transparency	Retail Branches	56	2.7	1.127	0.151
	Commercial Branches	65	2.88	0.927	0.115
Firm's Leverage	Retail Branches	56	3.25	0.858	0.115
	Commercial Branches	65	3.37	0.72	0.089
Firm's Organizational Form	Retail Branches	56	2.7	0.971	0.13
	Commercial Branches	65	2.85	0.852	0.106
Firm's Liquidity	Retail Branches	56	3.13	0.854	0.114
	Commercial Branches	65	3.06	0.726	0.09
Firm's Sector of Activity	Retail Branches	56	3.25	0.667	0.089
	Commercial Branches	65	3.17	0.876	0.109
Firm's Credit Rating	Retail Branches	56	3.39	0.908	0.121
	Commercial Branches	65	3.48	0.731	0.091
Stability of Demand for Firm's Products	Retail Branches	56	3.38	0.524	0.07
	Commercial Branches	65	3.31	0.61	0.076
Existence of Deposit Relationship	Retail Branches	56	2.86	1.034	0.138
	Commercial Branches	65	2.86	0.864	0.107
Firm's Deposit Account Balance	Retail Branches	56	2.55	1.025	0.137
	Commercial Branches	65	2.4	0.88	0.109
Existence of Loan Relationship	Retail Branches	56	2.82	0.855	0.114
	Commercial Branches	65	2.58	0.983	0.122
Existence of Fin Mgt. Service Relationship	Retail Branches	56	2.43	0.951	0.127
	Commercial Branches	65	2.26	0.889	0.11
Length of Relationship with Bank	Retail Branches	56	2.73	0.924	0.124
	Commercial Branches	65	2.23	0.844	0.105
Exclusivity of Relationship	Retail Branches	56	2.59	1.125	0.15
	Commercial Branches	65	2.11	1.017	0.126
Distance to SME Customer	Retail Branches	56	2.36	0.943	0.126
	Commercial Branches	65	1.89	0.812	0.101
Physical Observation of Business	Retail Branches	56	2.98	0.82	0.11
	Commercial Branches	65	2.91	0.701	0.087
Owners' Credit Rating	Retail Branches	56	3.38	0.799	0.107
	Commercial Branches	65	3.43	0.661	0.082
Owners' Educational Attainment	Retail Branches	56	2.05	0.796	0.106
	Commercial Branches	65	2.38	0.93	0.115
Owners' Business Experience	Retail Branches	56	3.2	0.724	0.097
	Commercial Branches	65	3.26	0.668	0.083
Owners' Personal Guarantee	Retail Branches	56	3.29	0.756	0.101
	Commercial Branches	65	3.22	0.78	0.097
Owners' Personal Wealth	Retail Branches	56	2.5	0.853	0.114
	Commercial Branches	65	2.54	0.792	0.098
Owners' Equity Stake	Retail Branches	56	3.09	0.793	0.106
	Commercial Branches	65	3.31	0.917	0.114

APPENDIX 5.3: T-test for Equality of Means of Borrower Factors Across Branch Type

		t-test for Equality of Means					
		t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
						Lower	Upper
Purpose of Loan	Equal means assumed	0.241	0.81	0.024	0.099	-0.173	0.221
	Equal means not assumed	0.243	0.808	0.024	0.098	-0.17	0.218
Loan Amount	Equal means assumed	0.299	0.765	0.045	0.149	-0.25	0.339
	Equal means not assumed	0.302	0.763	0.045	0.148	-0.248	0.337
Loan Security	Equal means assumed	-1.343	0.182	-0.199	0.148	-0.493	0.094
	Equal means not assumed	-1.318	0.191	-0.199	0.151	-0.499	0.101
Presentation of Business Plan	Equal means assumed	-1.559	0.122	-0.219	0.14	-0.497	0.059
	Equal means not assumed	-1.552	0.124	-0.219	0.141	-0.499	0.061
Profitability of Business	Equal means assumed	-0.93	0.354	-0.098	0.105	-0.305	0.11
	Equal means not assumed	-0.917	0.361	-0.098	0.106	-0.308	0.113
Firm's Size	Equal means assumed	-1.766	0.08	-0.247	0.14	-0.524	0.03
	Equal means not assumed	-1.743	0.084	-0.247	0.142	-0.528	0.034
Firm's Age	Equal means assumed	-0.306	0.76	-0.043	0.139	-0.318	0.233
	Equal means not assumed	-0.306	0.761	-0.043	0.139	-0.319	0.233
Firm's Transparency	Equal means assumed	-0.966	0.336	-0.18	0.187	-0.55	0.189
	Equal means not assumed	-0.953	0.343	-0.18	0.189	-0.556	0.195
Firm's Leverage	Equal means assumed	-0.831	0.407	-0.119	0.143	-0.403	0.165
	Equal means not assumed	-0.821	0.414	-0.119	0.145	-0.407	0.169
Firm's Organizational Form	Equal means assumed	-0.904	0.368	-0.15	0.166	-0.478	0.178
	Equal means not assumed	-0.895	0.373	-0.15	0.167	-0.481	0.182
Firm's Liquidity	Equal means assumed	0.442	0.659	0.063	0.144	-0.221	0.348
	Equal means not assumed	0.436	0.663	0.063	0.145	-0.225	0.352
Firm's Sector of Activity	Equal means assumed	0.563	0.574	0.081	0.143	-0.203	0.365
	Equal means not assumed	0.574	0.567	0.081	0.141	-0.198	0.359
Firm's Credit Rating	Equal means assumed	-0.564	0.574	-0.084	0.149	-0.379	0.211
	Equal means not assumed	-0.555	0.58	-0.084	0.151	-0.384	0.216
Stability of Demand for Firm's Products	Equal means assumed	0.645	0.52	0.067	0.104	-0.139	0.274
	Equal means not assumed	0.652	0.515	0.067	0.103	-0.137	0.272
Existence of Deposit Relationship	Equal means assumed	-0.025	0.98	-0.004	0.173	-0.346	0.337
	Equal means not assumed	-0.025	0.98	-0.004	0.175	-0.351	0.342
Firm's Deposit Account Balance	Equal means assumed	0.886	0.377	0.154	0.173	-0.189	0.497
	Equal means not assumed	0.876	0.383	0.154	0.175	-0.194	0.501
Existence of Loan Relationship	Equal means assumed	1.403	0.163	0.237	0.169	-0.097	0.571
	Equal means not assumed	1.418	0.159	0.237	0.167	-0.094	0.568
Existence of Fin Mgt Service Relationship	Equal means assumed	0.998	0.32	0.167	0.167	-0.164	0.498
	Equal means not assumed	0.993	0.323	0.167	0.168	-0.166	0.5
Length of Relationship with Bank	Equal means assumed	3.119	***0.002	0.501	0.161	0.183	0.82
	Equal means not assumed	3.097	0.002	0.501	0.162	0.181	0.822
Exclusivity of Relationship	Equal means assumed	2.473	**0.015	0.482	0.195	0.096	0.867
	Equal means not assumed	2.454	0.016	0.482	0.196	0.093	0.87
Distance to SME Customer	Equal means assumed	2.914	***0.004	0.465	0.16	0.149	0.781
	Equal means not assumed	2.882	0.005	0.465	0.161	0.145	0.785
Physical Observation of Business	Equal means assumed	0.538	0.591	0.074	0.138	-0.199	0.348
	Equal means not assumed	0.532	0.596	0.074	0.14	-0.203	0.352
Owners' Credit Rating	Equal means assumed	-0.42	0.675	-0.056	0.133	-0.319	0.207
	Equal means not assumed	-0.414	0.679	-0.056	0.135	-0.323	0.211
Owners' Educational Attainment	Equal means assumed	-2.085	**0.039	-0.331	0.159	-0.645	-0.017
	Equal means not assumed	-2.11	0.037	-0.331	0.157	-0.642	-0.02
Owners' Business Experience	Equal means assumed	-0.514	0.608	-0.065	0.127	-0.316	0.186
	Equal means not assumed	-0.511	0.61	-0.065	0.127	-0.317	0.187
Owners' Personal Guarantee	Equal means assumed	0.501	0.617	0.07	0.14	-0.207	0.348
	Equal means not assumed	0.503	0.616	0.07	0.14	-0.207	0.347
Owners' Personal Wealth	Equal means assumed	-0.257	0.798	-0.038	0.15	-0.335	0.258
	Equal means not assumed	-0.256	0.799	-0.038	0.15	-0.337	0.26
Owners' Equity Stake	Equal means assumed	-1.39	0.167	-0.218	0.157	-0.53	0.093
	Equal means not assumed	-1.405	0.163	-0.218	0.155	-0.526	0.089

*** significant at the 1% level **significant at the 5% level

APPENDIX 5.4: Levene's Test for Equality of Variances of Borrower Factors by Branch Type

		Levene's Test for Equality of Variances	
		F	Sig.
Purpose of Loan	Equal variances assumed	0.269	0.605
	Equal variances not assumed		
Loan Amount	Equal variances assumed	0.184	0.669
	Equal variances not assumed		
Loan Security	Equal variances assumed	2.986	0.087
	Equal variances not assumed		
Presentation of Business Plan	Equal variances assumed	0.214	0.644
	Equal variances not assumed		
Profitability of Business	Equal variances assumed	4.126	**0.044
	Equal variances not assumed		
Firm's Size	Equal variances assumed	5.885	**0.017
	Equal variances not assumed		
Firm's Age	Equal variances assumed	0.731	0.394
	Equal variances not assumed		
Firm's Transparency	Equal variances assumed	6.527	**0.012
	Equal variances not assumed		
Firm's Leverage	Equal variances assumed	0.566	0.453
	Equal variances not assumed		
Firm's Organizational Form	Equal variances assumed	1.594	0.209
	Equal variances not assumed		
Firm's Liquidity	Equal variances assumed	1.373	0.244
	Equal variances not assumed		
Firm's Sector of Activity	Equal variances assumed	4.781	**0.031
	Equal variances not assumed		
Firm's Credit Rating	Equal variances assumed	1.826	0.179
	Equal variances not assumed		
Stability of Demand for Firm's Products	Equal variances assumed	0.876	0.351
	Equal variances not assumed		
Existence of Deposit Relationship	Equal variances assumed	1.837	0.178
	Equal variances not assumed		
Firm's Deposit Account Balance	Equal variances assumed	3.22	0.075
	Equal variances not assumed		
Existence of Loan Relationship	Equal variances assumed	2.719	0.102
	Equal variances not assumed		
Existence of Fin Mgt Service Relationship	Equal variances assumed	0.372	0.543
	Equal variances not assumed		
Length of Relationship with Bank	Equal variances assumed	1.944	0.166
	Equal variances not assumed		
Exclusivity of Relationship	Equal variances assumed	1.837	0.178
	Equal variances not assumed		
Distance to SME Customer	Equal variances assumed	1.916	0.169
	Equal variances not assumed		
Physical Observation of Business	Equal variances assumed	1.325	0.252
	Equal variances not assumed		
Owners' Credit Rating	Equal variances assumed	0.962	0.329
	Equal variances not assumed		
Owners' Educational Attainment	Equal variances assumed	4.798	**0.03
	Equal variances not assumed		
Owners' Business Experience	Equal variances assumed	0.267	0.606
	Equal variances not assumed		
Owners' Personal Guarantee	Equal variances assumed	0.026	0.873
	Equal variances not assumed		
Owners' Personal Wealth	Equal variances assumed	0.458	0.5
	Equal variances not assumed		
Owners' Equity Stake	Equal variances assumed	4.957	**0.028
	Equal variances not assumed		

**Significant at the 5% level

APPENDIX 5.5: Frequency Table of Contributory Factors to the Riskiness of SME Loans

Contributory Factors to the Riskiness of SME Loans	Insignificant		Moderately Significant		Significant		Very Significant	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
High Incidence of Diversion of Funds	2	1.7	1	0.8	21	17.4	97	80.2
Weak Management Capacity or Competence	1	0.8	5	4.1	57	47.1	58	47.9
Absence of Formal Record Keeping	n.a	n.a	14	11.6	56	46.3	51	42.1
Inability of Firms to Service Debts	n.a	n.a	7	5.8	50	41.3	64	52.9
Investment in Risky Activities or Volatile Sectors	n.a	n.a	10	8.3	55	45.5	56	46.3
Limited Scope of Business Operations	3	2.5	29	24	66	54.5	23	19
Poor Quality of Projects	1	0.8	18	14.9	58	47.9	44	36.4
Weak Ownership Structure	n.a	n.a	21	17.4	52	43	48	39.7
High Costs of Doing Business	1	0.8	15	12.4	45	37.2	60	49.6
(In)effectiveness of Bank's Screening Procedures	4	3.3	24	19.8	61	50.4	32	26.4
Term Lending Outside of Bank's Scope & Specialization	2	1.7	37	30.6	48	39.7	34	28.1
Valid N = 121								
n.a means "no score was obtained"								
All percentages (%) sum up to 100% horizontally across each rating grid								

Source: Questionnaire survey of relationship managers/loan officers in Nigerian banks

APPENDIX 5.6: Frequency Table for Supply Side Factors Affecting Bank Lending to SMEs

Lender Characteristics & External Factors	Unimportant		Moderately Important		Important		Very Important	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Influence of Regulatory Requirements	1	0.8	11	9.1	18	14.9	91	75.2
Bank's Lending Policies Towards SMEs	2	1.7	12	9.9	36	29.8	71	58.7
Proportion of Bank's Asset Portfolio in SME Loans	5	4.1	27	22.3	54	44.6	35	28.9
Sectoral Distribution of Outstanding Loans to SMEs	5	4.1	27	22.3	64	52.9	25	20.7
History of Previous SME Loan Performance	3	2.5	8	6.6	53	43.8	57	47.1
Risk Profile of the SME Sector	2	1.7	6	5	53	43.8	60	49.6
Bank's Deposit Level and Financial Stability	4	3.3	9	7.4	52	43	56	46.3
Demand Facing Banks in the SME Loan Market	5	4.1	37	30.6	55	45.5	24	19.8
Competition from other Banks for SME Loans	10	8.3	34	28.1	64	52.9	13	10.7
Interest Rates or Returns from Competing Assets	7	5.8	28	23.1	53	43.8	33	27.3
Maturity Structure of Bank's Security Holdings	12	9.9	34	28.1	56	46.3	19	15.7
Specialization of Bank's Lending Officers	13	10.7	32	26.4	56	46.3	20	16.5
High Transaction Costs Associated with SME Loans	6	5	30	24.8	58	47.9	27	22.3
Adequacy of Information on Borrower Financial Condition	n.a	n.a	21	17.4	49	40.5	51	42.1
Enforcement Actions from Regulators	3	2.5	22	18.2	59	48.8	37	30.6
General Macroeconomic Conditions	2	1.7	30	24.8	58	47.9	31	25.6
Valid N = 121								
n.a means "no score was obtained"								
All percentages (%) sum up to 100% horizontally across each rating grid								

Source: Questionnaire survey of relationship managers/loan officers in Nigerian banks

APPENDIX 5.7: Importance of Borrower and Lender Factors Affecting SME Loan Supply

Lending Criteria	Rank	Mean Score	Std. Deviation
Purpose of Loan	1	3.83	0.543
Influence of Regulatory Requirements	2	3.64	0.681
Profitability of Business	3	3.57	0.575
Bank's Lending Policies Towards SMEs	4	3.45	0.742
Loan Security	4	3.45	0.816
Firm's Credit Rating	6	3.44	0.815
Risk Profile of the SME Sector	7	3.41	0.667
Owners' Credit Rating	8	3.4	0.725
History of Previous SME Loan Performance	9	3.36	0.717
Stability of Demand for Firm's Products	10	3.34	0.571
Bank's Deposit Level and Financial Stability	11	3.32	0.755
Firm's Leverage	12	3.31	0.786
Presentation of Business Plan	12	3.31	0.775
Loan Amount	14	3.3	0.813
Owners' Personal Guarantee	15	3.25	0.767
Adequacy of Information on Borrower Financial Condition	15	3.25	0.733
Owners' Business Experience	17	3.23	0.692
Firm's Sector of Activity	18	3.21	0.784
Owners' Equity Stake	18	3.21	0.865
Firm's Liquidity	20	3.09	0.785
Enforcement Actions from Regulators	21	3.07	0.766
Proportion of Bank's Asset Portfolio in SME Loans	22	2.98	0.826
General Macroeconomic Conditions	22	2.98	0.758
Physical Observation of Business	24	2.94	0.756
Interest Rates or Returns from Competing Assets	25	2.93	0.858
Sectoral Distribution of Outstanding Loans to SMEs	26	2.9	0.768
High Transaction Costs Associated with SME Loans	27	2.88	0.812
Existence of Deposit Relationship	28	2.86	0.943
Firm's Age	29	2.83	0.76
Demand Facing Banks in the SME Loan Market	30	2.81	0.799
Firm's Transparency	31	2.79	1.024
Firm's Size	31	2.79	0.774
Firm's Organizational Form	33	2.78	0.908
Existence of Loan Relationship	34	2.69	0.93
Specialization of Bank's Lending Officers	34	2.69	0.876
Maturity Structure of Bank's Security Holdings	36	2.68	0.858
Competition from other Banks for SME Loans	37	2.66	0.781
Owners' Personal Wealth	38	2.52	0.818
Firm's Deposit Account Balance	39	2.47	0.949
Length of Relationship with Bank	40	2.46	0.913
Existence of Financial Management Service Relationship	41	2.34	0.918
Exclusivity of Relationship	42	2.33	1.091
Owners' Educational Attainment	43	2.23	0.883
Distance to SME Customer	44	2.11	0.902
Valid N =121			
*4-point scale was used as follows: 1- unimportant, 2- moderately important, 3- important, 4 - very important			

APPENDIX 6.1: Results of Stepwise Procedure for Predictors of Risk Premium**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	RISK_ENVIRONMENT		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	FIRM_AGE		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	INTEREST_SMOOTHING		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: RISK_PREMIUM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429 ^a	0.184	0.177	1.026
2	.485 ^b	0.235	0.222	0.998
3	.530 ^c	0.281	0.262	0.972

a. Predictors: (Constant), RISK_ENVIRONMENT

b. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE

c. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE, INTEREST_SMOOTHING

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.3	1	28.3	26.866	.000 ^b
1 Residual	125.352	119	1.053		
Total	153.653	120			
Regression	36.074	2	18.037	18.102	.000 ^c
2 Residual	117.578	118	0.996		
Total	153.653	120			
Regression	43.147	3	14.382	15.228	.000 ^d
3 Residual	110.505	117	0.944		
Total	153.653	120			

a. Dependent Variable: RISK_PREMIUM

b. Predictors: (Constant), RISK_ENVIRONMENT

c. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE

d. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE, INTEREST_SMOOTHING

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.153	0.449		0.342	0.733
RISK_ENVIRONMENT	0.689	0.133	0.429	5.183	.000
2 (Constant)	-0.135	0.449		-0.3	0.765
RISK_ENVIRONMENT	0.596	0.133	0.372	4.47	.000
FIRM_AGE	0.272	0.097	0.232	2.793	0.006
3 (Constant)	0.335	0.469		0.713	0.477
RISK_ENVIRONMENT	0.597	0.13	0.372	4.596	.000
FIRM_AGE	0.289	0.095	0.247	3.041	0.003
INTEREST_SMOOTHING	-0.304	0.111	-0.215	-2.737	0.007

a. Dependent Variable: RISK_PREMIUM

Excluded Variables^a

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
1	BRANCH_TYPE	-.016 ^b	-0.192	0.848	0.995
	BANK_SIZE	.085 ^b	1.024	0.308	1
	Bank_dummy1	.047 ^b	0.564	0.574	0.999
	Bank_dummy2	-.057 ^b	-0.687	0.494	1
	Bank_dummy3	-.048 ^b	-0.582	0.561	0.997
	Bank_dummy4	.027 ^b	0.323	0.747	1
	Bank_dummy5	-.131 ^b	-1.588	0.115	0.994
	Bank_dummy6	-.045 ^b	-0.538	0.592	0.968
	Bank_dummy7	-.097 ^b	-1.175	0.242	0.993
	Bank_dummy8	-.066 ^b	-0.798	0.426	0.999
	Bank_dummy9	.055 ^b	0.661	0.51	0.996
	Bank_dummy10	.132 ^b	1.599	0.112	0.996
	Bank_dummy11	.162 ^b	1.973	0.051	0.998
	Bank_dummy12	.010 ^b	0.114	0.909	0.994
	FIRM_AGE	.232 ^b	2.793	0.006	0.939
	INTEREST_SMOOTHING	-.199 ^b	-2.459	0.015	1
	PLEDGE COLLATERAL	.150 ^b	1.757	0.082	0.929
	FIRM_RATING	.054 ^b	0.637	0.526	0.952
	COST_OF_FUNDS	.089 ^b	1.02	0.31	0.903
	ADMIN_COSTS	.165 ^b	1.824	0.071	0.82
2	BRANCH_TYPE	-.073 ^c	-0.876	0.383	0.94
	BANK_SIZE	.103 ^c	1.275	0.205	0.994
	Bank_dummy1	.014 ^c	0.17	0.865	0.978
	Bank_dummy2	-.014 ^c	-0.17	0.865	0.963
	Bank_dummy3	-.128 ^c	-1.525	0.13	0.906
	Bank_dummy4	.032 ^c	0.4	0.69	0.999
	Bank_dummy5	-.109 ^c	-1.347	0.181	0.983
	Bank_dummy6	-.035 ^c	-0.421	0.675	0.966
	Bank_dummy7	-.087 ^c	-1.075	0.285	0.991
	Bank_dummy8	-.067 ^c	-0.824	0.411	0.999
	Bank_dummy9	.097 ^c	1.181	0.24	0.966
	Bank_dummy10	.136 ^c	1.695	0.093	0.995
	Bank_dummy11	.142 ^c	1.77	0.079	0.99
	Bank_dummy12	-.005 ^c	-0.067	0.946	0.989
	INTEREST_SMOOTHING	-.215 ^c	-2.737	0.007	0.995
	PLEDGE COLLATERAL	.107 ^c	1.252	0.213	0.891
	FIRM_RATING	.007 ^c	0.08	0.937	0.911
	COST_OF_FUNDS	.070 ^c	0.827	0.41	0.898
	ADMIN_COSTS	.126 ^c	1.399	0.165	0.796
3	BRANCH_TYPE	-.028 ^d	-0.336	0.738	0.899
	BANK_SIZE	.131 ^d	1.666	0.099	0.979
	Bank_dummy1	.017 ^d	0.21	0.834	0.977
	Bank_dummy2	-.068 ^d	-0.828	0.409	0.911
	Bank_dummy3	-.165 ^d	-2.01	0.047	0.886
	Bank_dummy4	.068 ^d	0.858	0.393	0.974
	Bank_dummy5	-.116 ^d	-1.476	0.143	0.982
	Bank_dummy6	-.012 ^d	-0.151	0.88	0.956
	Bank_dummy7	-.084 ^d	-1.068	0.288	0.991
	Bank_dummy8	-.030 ^d	-0.378	0.706	0.969
	Bank_dummy9	.088 ^d	1.103	0.272	0.965
	Bank_dummy10	.091 ^d	1.128	0.262	0.942
	Bank_dummy11	.135 ^d	1.726	0.087	0.989
	Bank_dummy12	.048 ^d	0.589	0.557	0.935
	PLEDGE COLLATERAL	.138 ^d	1.662	0.099	0.876
	FIRM_RATING	.067 ^d	0.794	0.429	0.854
	COST_OF_FUNDS	.131 ^d	1.548	0.124	0.848
	ADMIN_COSTS	.140 ^d	1.602	0.112	0.793

a. Dependent Variable: RISK_PREMIUM

b. Predictors: (Constant), RISK_ENVIRONMENT

c. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE

d. Predictors: (Constant), RISK_ENVIRONMENT, FIRM_AGE, INTEREST_SMOOTHING

APPENDIX 6.2: Results of Stepwise Procedure for Predictors of Collateral Usage

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Bank_dummy11		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Bank_dummy5		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	Bank_dummy7		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	Bank_dummy2		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	Bank_dummy10		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: REQUEST_COLLATERAL

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.334 ^a	0.111	0.104	0.897
2	.422 ^b	0.178	0.164	0.866
3	.460 ^c	0.211	0.191	0.852
4	.492 ^d	0.242	0.216	0.839
5	.517 ^e	0.268	0.236	0.828

a. Predictors: (Constant), Bank_dummy11

b. Predictors: (Constant), Bank_dummy11, Bank_dummy5

c. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7

d. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2

e. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2, Bank_dummy10

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.009	1	12.009	14.934	.000 ^a
1 Residual	95.694	119	0.804		
Total	107.702	120			
Regression	19.183	2	9.591	12.786	.000 ^a
2 Residual	88.52	118	0.75		
Total	107.702	120			
Regression	22.768	3	7.589	10.454	.000 ^a
3 Residual	84.935	117	0.726		
Total	107.702	120			
Regression	26.065	4	6.516	9.259	.000 ^a
4 Residual	81.638	116	0.704		
Total	107.702	120			
Regression	28.812	5	5.762	8.4	.000 ^a
5 Residual	78.89	115	0.686		
Total	107.702	120			

a. Dependent Variable: REQUEST_COLLATERAL

b. Predictors: (Constant), Bank_dummy11

c. Predictors: (Constant), Bank_dummy11, Bank_dummy5

d. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7

e. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2

f. Predictors: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2, Bank_dummy10

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.144	0.085		36.94	0
Bank_dummy11	-1.144	0.296	-0.334	-3.864	0
2 (Constant)	3.069	0.086		35.782	0
Bank_dummy11	-1.069	0.287	-0.312	-3.723	0
Bank_dummy5	0.931	0.301	0.259	3.092	0.002
3 (Constant)	3.13	0.089		35.241	0
Bank_dummy11	-1.13	0.284	-0.33	-3.985	0
Bank_dummy5	0.87	0.298	0.242	2.922	0.004
Bank_dummy7	-0.63	0.284	-0.184	-2.222	0.028
4 (Constant)	3.193	0.092		34.673	0
Bank_dummy11	-1.193	0.281	-0.348	-4.248	0
Bank_dummy5	0.807	0.294	0.225	2.742	0.007
Bank_dummy7	-0.693	0.281	-0.202	-2.467	0.015
Bank_dummy2	-0.637	0.294	-0.177	-2.164	0.032
5 (Constant)	3.264	0.098		33.438	0
Bank_dummy11	-1.264	0.28	-0.369	-4.522	0
Bank_dummy5	0.736	0.293	0.205	2.514	0.013
Bank_dummy7	-0.764	0.28	-0.223	-2.733	0.007
Bank_dummy2	-0.708	0.293	-0.197	-2.419	0.017
Bank_dummy10	-0.537	0.268	-0.164	-2.001	0.048

a. Dependent Variable: REQUEST_COLLATERAL

Excluded Variables ^a						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	BRANCH_TYPE	.112 ^b	1.295	0.198	0.118	0.999
	BANK_SIZE	-.100 ^b	-1.121	0.265	-0.103	0.943
	Bank_dummy1	-.018 ^b	-0.207	0.837	-0.019	0.991
	Bank_dummy2	-.178 ^b	-2.083	0.039	-0.188	0.993
	Bank_dummy3	.057 ^b	0.659	0.511	0.061	0.993
	Bank_dummy4	.057 ^b	0.659	0.511	0.061	0.993
	Bank_dummy5	.259 ^b	3.092	0.002	0.274	0.993
	Bank_dummy6	.013 ^b	0.146	0.884	0.013	0.991
	Bank_dummy7	-.207 ^b	-2.43	0.017	-0.218	0.992
	Bank_dummy8	.126 ^b	1.463	0.146	0.133	0.99
	Bank_dummy9	-.018 ^b	-0.207	0.837	-0.019	0.991
	Bank_dummy10	-.141 ^b	-1.636	0.105	-0.149	0.991
	Bank_dummy12	.057 ^b	0.659	0.511	0.061	0.993
	COLL_FIRM_SIZE	-.008 ^b	-0.089	0.929	-0.008	0.995
	PROJ_RISKINESS	-.006 ^b	-0.069	0.945	-0.006	0.97
	COLL_FIRM_RATING	.080 ^b	0.93	0.354	0.085	1
	RELN_LENGTH	-.067 ^b	-0.776	0.439	-0.071	0.996
	LOAN_SIZE	-.111 ^b	-1.284	0.202	-0.117	0.996
	BUS_CYCLE	-.091 ^b	-1.049	0.296	-0.096	0.991
	CUSTOMER_TYPE	-.050 ^b	-0.562	0.575	-0.052	0.954
2	COLL_FIRM_AGE	-.103 ^b	-1.191	0.236	-0.109	0.988
	EXCLUSIVITY	-.027 ^b	-0.302	0.763	-0.028	0.97
	LOAN_DIVERSION	.074 ^b	0.857	0.393	0.079	0.992
	BRANCH_TYPE	.078 ^b	0.927	0.356	0.085	0.981
	BANK_SIZE	-.008 ^b	-0.092	0.927	-0.009	0.83
	Bank_dummy1	.008 ^b	0.09	0.928	0.008	0.981
	Bank_dummy2	-.157 ^b	-1.881	0.062	-0.171	0.985
	Bank_dummy3	.081 ^b	0.96	0.339	0.088	0.985
	Bank_dummy4	.081 ^b	0.96	0.339	0.088	0.985
	Bank_dummy6	.039 ^b	0.457	0.648	0.042	0.981
	Bank_dummy7	-.184 ^b	-2.222	0.028	-0.201	0.983
	Bank_dummy8	.155 ^b	1.856	0.066	0.169	0.979
	Bank_dummy9	.008 ^b	0.09	0.928	0.008	0.981
	Bank_dummy10	-.117 ^b	-1.389	0.167	-0.127	0.981
	Bank_dummy12	.081 ^b	0.96	0.339	0.088	0.985
	COLL_FIRM_SIZE	.085 ^b	0.963	0.337	0.089	0.891
	PROJ_RISKINESS	.001 ^b	0.017	0.986	0.002	0.97
	COLL_FIRM_RATING	.019 ^b	0.219	0.827	0.02	0.941
	RELN_LENGTH	.014 ^b	0.157	0.875	0.015	0.901
	LOAN_SIZE	-.045 ^b	-0.518	0.605	-0.048	0.925
BUS_CYCLE	-.035 ^b	-0.406	0.685	-0.038	0.942	
CUSTOMER_TYPE	.029 ^b	0.319	0.75	0.029	0.875	
COLL_FIRM_AGE	-.112 ^b	-1.338	0.183	-0.123	0.987	
EXCLUSIVITY	.033 ^b	0.378	0.706	0.035	0.922	
LOAN_DIVERSION	.059 ^b	0.704	0.483	0.065	0.989	
3	BRANCH_TYPE	.113 ^b	1.349	0.18	0.124	0.952
	BANK_SIZE	.045 ^b	0.485	0.629	0.045	0.776
	Bank_dummy1	-.014 ^b	-0.163	0.871	-0.015	0.968
	Bank_dummy2	-.177 ^b	-2.164	0.032	-0.197	0.975
	Bank_dummy3	.063 ^b	0.751	0.454	0.07	0.975
	Bank_dummy4	.063 ^b	0.751	0.454	0.07	0.975
	Bank_dummy6	.018 ^b	0.212	0.832	0.02	0.968
	Bank_dummy8	.135 ^b	1.623	0.107	0.149	0.965
	Bank_dummy9	-.014 ^b	-0.163	0.871	-0.015	0.968
	Bank_dummy10	-.140 ^b	-1.686	0.095	-0.155	0.968
	Bank_dummy12	.063 ^b	0.751	0.454	0.07	0.975
	COLL_FIRM_SIZE	.088 ^b	1.009	0.315	0.093	0.89
	PROJ_RISKINESS	.010 ^b	0.114	0.909	0.011	0.968
	COLL_FIRM_RATING	.022 ^b	0.256	0.799	0.024	0.941
	RELN_LENGTH	-.010 ^b	-0.11	0.912	-0.01	0.888
	LOAN_SIZE	-.070 ^b	-0.808	0.421	-0.075	0.911
	BUS_CYCLE	-.075 ^b	-0.868	0.387	-0.08	0.905
	CUSTOMER_TYPE	.048 ^b	0.538	0.591	0.05	0.867
	COLL_FIRM_AGE	-.136 ^b	-1.642	0.103	-0.151	0.973
	EXCLUSIVITY	.002 ^b	0.025	0.98	0.002	0.898
LOAN_DIVERSION	.073 ^b	0.886	0.377	0.082	0.983	
4	BRANCH_TYPE	.067 ^b	0.772	0.442	0.072	0.873
	BANK_SIZE	-.039 ^b	-0.385	0.701	-0.036	0.656
	Bank_dummy1	-.036 ^b	-0.431	0.667	-0.04	0.954
	Bank_dummy3	.044 ^b	0.531	0.597	0.049	0.963
	Bank_dummy4	.044 ^b	0.531	0.597	0.049	0.963
	Bank_dummy6	-.004 ^b	-0.046	0.963	-0.004	0.954
	Bank_dummy8	.114 ^b	1.377	0.171	0.127	0.95
	Bank_dummy9	-.036 ^b	-0.431	0.667	-0.04	0.954
	Bank_dummy10	-.164 ^b	-2.001	0.048	-0.183	0.954
	Bank_dummy12	.044 ^b	0.531	0.597	0.049	0.963
	COLL_FIRM_SIZE	.077 ^b	0.902	0.369	0.084	0.888
	PROJ_RISKINESS	.048 ^b	0.568	0.571	0.053	0.928
	COLL_FIRM_RATING	.000 ^b	0.001	0.999	0	0.927
	RELN_LENGTH	-.008 ^b	-0.091	0.928	-0.008	0.888
	LOAN_SIZE	-.032 ^b	-0.365	0.716	-0.034	0.87
	BUS_CYCLE	-.041 ^b	-0.469	0.64	-0.044	0.871
	CUSTOMER_TYPE	-.014 ^b	-0.156	0.877	-0.015	0.777
	COLL_FIRM_AGE	-.111 ^b	-1.347	0.181	-0.125	0.951
	EXCLUSIVITY	.040 ^b	0.455	0.65	0.042	0.863
	LOAN_DIVERSION	.099 ^b	1.201	0.232	0.111	0.966
5	BRANCH_TYPE	.026 ^b	0.29	0.772	0.027	0.818
	BANK_SIZE	.019 ^b	0.189	0.851	0.018	0.603
	Bank_dummy1	-.062 ^b	-0.751	0.454	-0.07	0.932
	Bank_dummy3	.022 ^b	0.268	0.789	0.025	0.945
	Bank_dummy4	.022 ^b	0.268	0.789	0.025	0.945
	Bank_dummy6	-.030 ^b	-0.356	0.723	-0.033	0.932
	Bank_dummy8	.090 ^b	1.083	0.281	0.101	0.925
	Bank_dummy9	-.062 ^b	-0.751	0.454	-0.07	0.932
	Bank_dummy12	.022 ^b	0.268	0.789	0.025	0.945
	COLL_FIRM_SIZE	.085 ^b	0.998	0.32	0.093	0.886
	PROJ_RISKINESS	.048 ^b	0.579	0.564	0.054	0.928
	COLL_FIRM_RATING	-.014 ^b	-0.171	0.865	-0.016	0.921
	RELN_LENGTH	-.022 ^b	-0.253	0.801	-0.024	0.882
	LOAN_SIZE	.013 ^b	0.143	0.886	0.013	0.813
	BUS_CYCLE	-.021 ^b	-0.247	0.806	-0.023	0.859
	CUSTOMER_TYPE	.002 ^b	0.025	0.98	0.002	0.771
	COLL_FIRM_AGE	-.130 ^b	-1.587	0.115	-0.147	0.94
	EXCLUSIVITY	.015 ^b	0.178	0.859	0.017	0.846
	LOAN_DIVERSION	.118 ^b	1.455	0.148	0.135	0.954

a. Dependent Variable: REQUEST_COLLATERAL

b. Predictors in the Model: (Constant), Bank_dummy11

c. Predictors in the Model: (Constant), Bank_dummy11, Bank_dummy5

d. Predictors in the Model: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7

e. Predictors in the Model: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2

f. Predictors in the Model: (Constant), Bank_dummy11, Bank_dummy5, Bank_dummy7, Bank_dummy2, Bank_dummy10

APPENDIX 6.3: Results of Stepwise Procedure for Predictors of Collateral Amount**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	REQUEST_COLLATERAL		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	LOAN_SIZE		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: FULL_COLLATERAL

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.482 ^a	0.232	0.225	0.826
2	.562 ^b	0.316	0.305	0.782

a. Predictors: (Constant), REQUEST_COLLATERAL

b. Predictors: (Constant), REQUEST_COLLATERAL, LOAN_SIZE

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.488	1	24.488	35.924	.000 ^b
1 Residual	81.116	119	0.682		
Total	105.603	120			
Regression	33.387	2	16.694	27.277	.000 ^c
2 Residual	72.216	118	0.612		
Total	105.603	120			

a. Dependent Variable: FULL_COLLATERAL

b. Predictors: (Constant), REQUEST_COLLATERAL

c. Predictors: (Constant), REQUEST_COLLATERAL, LOAN_SIZE

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.653	0.254		6.51	0
1 REQUEST_COLLATERAL	0.477	0.08	0.482	5.994	0
(Constant)	0.662	0.354		1.871	0.064
2 REQUEST_COLLATERAL	0.515	0.076	0.52	6.77	0
LOAN_SIZE	0.291	0.076	0.293	3.813	0

a. Dependent Variable: FULL_COLLATERAL

Excluded Variables^a

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
BRANCH_TYPE	-.184 ^b	-2.313	0.022	-0.208	0.986
BANK_SIZE	.012 ^b	0.151	0.88	0.014	0.97
Bank_dummy1	-.043 ^b	-0.534	0.594	-0.049	1
Bank_dummy2	.109 ^b	1.343	0.182	0.123	0.978
Bank_dummy3	-.074 ^b	-0.92	0.36	-0.084	0.993
Bank_dummy4	.028 ^b	0.342	0.733	0.031	0.993
Bank_dummy5	-.038 ^b	-0.456	0.649	-0.042	0.918
Bank_dummy6	-.058 ^b	-0.718	0.474	-0.066	0.998
1 Bank_dummy7	-.081 ^b	-0.997	0.321	-0.091	0.969
Bank_dummy8	-.057 ^b	-0.695	0.489	-0.064	0.975
Bank_dummy9	.019 ^b	0.229	0.819	0.021	1
Bank_dummy10	.140 ^b	1.752	0.082	0.159	0.988
Bank_dummy11	.034 ^b	0.393	0.695	0.036	0.889
Bank_dummy12	.028 ^b	0.342	0.733	0.031	0.993
COLL_FIRM_SIZE	-.101 ^b	-1.263	0.209	-0.115	0.999
COLL_FIRM_RATING	-.130 ^b	-1.622	0.108	-0.148	0.993
LOAN_SIZE	.293 ^b	3.813	0	0.331	0.983
BRANCH_TYPE	-.137 ^c	-1.781	0.077	-0.162	0.956
BANK_SIZE	.001 ^c	0.01	0.992	0.001	0.968
Bank_dummy1	-.061 ^c	-0.797	0.427	-0.073	0.996
Bank_dummy2	.047 ^c	0.598	0.551	0.055	0.932
Bank_dummy3	-.048 ^c	-0.618	0.538	-0.057	0.984
Bank_dummy4	.035 ^c	0.457	0.649	0.042	0.992
Bank_dummy5	.038 ^c	0.465	0.643	0.043	0.863
Bank_dummy6	-.059 ^c	-0.769	0.443	-0.071	0.998
2 Bank_dummy7	-.045 ^c	-0.581	0.562	-0.054	0.954
Bank_dummy8	-.062 ^c	-0.803	0.423	-0.074	0.975
Bank_dummy9	.010 ^c	0.129	0.898	0.012	0.999
Bank_dummy10	.077 ^c	0.979	0.33	0.09	0.936
Bank_dummy11	.028 ^c	0.344	0.732	0.032	0.888
Bank_dummy12	.066 ^c	0.852	0.396	0.079	0.977
COLL_FIRM_SIZE	-.103 ^c	-1.358	0.177	-0.125	0.999
COLL_FIRM_RATING	-.144 ^c	-1.903	0.059	-0.173	0.991

a. Dependent Variable: FULL_COLLATERAL

b. Predictors in the Model: (Constant), REQUEST_COLLATERAL

c. Predictors in the Model: (Constant), REQUEST_COLLATERAL, LOAN_SIZE

APPENDIX 7.1: Results of Stepwise Procedure for the Predictors of Information Acquisition

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Bank_dummy10		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Bank_dummy5		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	INT_DISCRETION		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	IND_APPROVAL		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: KNOWLEDGE

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.257 ^a	0.066	0.058	0.535
2	.314 ^b	0.099	0.083	0.528
3	.402 ^c	0.161	0.14	0.511
4	.435 ^d	0.189	0.161	0.505

a. Predictors: (Constant), Bank_dummy10

b. Predictors: (Constant), Bank_dummy10, Bank_dummy5

c. Predictors: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION

d. Predictors: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION, IND_APPROVAL

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.41	1	2.41	8.426	.004 ^b
1 Residual	34.036	119	0.286		
Total	36.446	120			
Regression	3.593	2	1.797	6.453	.002 ^c
2 Residual	32.853	118	0.278		
Total	36.446	120			
Regression	5.877	3	1.959	7.498	.000 ^d
3 Residual	30.569	117	0.261		
Total	36.446	120			
Regression	6.889	4	1.722	6.759	.000 ^e
4 Residual	29.557	116	0.255		
Total	36.446	120			

a. Dependent Variable: KNOWLEDGE

b. Predictors: (Constant), Bank_dummy10

c. Predictors: (Constant), Bank_dummy10, Bank_dummy5

d. Predictors: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION

e. Predictors: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION, IND_APPROVAL

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.236	0.051		43.857	0
Bank_dummy10	0.491	0.169	0.257	2.903	0.004
2 (Constant)	2.267	0.053		43.185	0
Bank_dummy10	0.46	0.168	0.241	2.745	0.007
Bank_dummy5	-0.378	0.184	-0.181	-2.062	0.041
3 (Constant)	2.337	0.056		41.659	0
Bank_dummy10	0.39	0.164	0.204	2.377	0.019
Bank_dummy5	-0.448	0.179	-0.214	-2.5	0.014
INT_DISCRETION	-0.393	0.133	-0.255	-2.956	0.004
4 (Constant)	2.363	0.057		41.545	0
Bank_dummy10	0.364	0.162	0.191	2.242	0.027
Bank_dummy5	-0.474	0.178	-0.227	-2.669	0.009
INT_DISCRETION	-0.359	0.132	-0.233	-2.717	0.008
IND_APPROVAL	-0.354	0.178	-0.169	-1.993	0.049

a. Dependent Variable: KNOWLEDGE

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	BRANCH_TYPE	-.106 ^b	-1.172	0.243	-0.107	0.949
	BANK_SIZE	.004 ^b	0.039	0.969	0.004	0.936
	Bank_dummy1	.074 ^b	0.831	0.408	0.076	0.99
	Bank_dummy2	-.007 ^b	-0.082	0.934	-0.008	0.992
	Bank_dummy3	-.007 ^b	-0.082	0.934	-0.008	0.992
	Bank_dummy4	.108 ^b	1.221	0.225	0.112	0.992
	Bank_dummy5	-.181 ^b	-2.062	0.041	-0.186	0.992
	Bank_dummy6	-.032 ^b	-0.355	0.723	-0.033	0.99
	Bank_dummy7	-.075 ^b	-0.845	0.4	-0.078	0.991
	Bank_dummy8	.110 ^b	1.24	0.217	0.113	0.989
	Bank_dummy9	.074 ^b	0.831	0.408	0.076	0.99
	Bank_dummy11	-.075 ^b	-0.845	0.4	-0.078	0.991
	Bank_dummy12	-.007 ^b	-0.082	0.934	-0.008	0.992
	IND_APPROVAL	-.181 ^b	-2.062	0.041	-0.186	0.992
	INT_DISCRETION	-.226 ^b	-2.592	0.011	-0.232	0.983
2	FREQ_COMM	.077 ^b	0.865	0.389	0.079	0.998
	RB_EXPERIENCE	-.020 ^b	-0.217	0.828	-0.02	0.956
	BRANCH_TYPE	-.085 ^c	-0.945	0.346	-0.087	0.936
	BANK_SIZE	-.069 ^c	-0.715	0.476	-0.066	0.825
	Bank_dummy1	.057 ^c	0.64	0.524	0.059	0.98
	Bank_dummy2	-.024 ^c	-0.268	0.789	-0.025	0.984
	Bank_dummy3	-.024 ^c	-0.268	0.789	-0.025	0.984
	Bank_dummy4	.093 ^c	1.056	0.293	0.097	0.984
	Bank_dummy6	-.050 ^c	-0.568	0.571	-0.052	0.98
	Bank_dummy7	-.093 ^c	-1.057	0.293	-0.097	0.982
	Bank_dummy8	.092 ^c	1.045	0.298	0.096	0.978
	Bank_dummy9	.057 ^c	0.64	0.524	0.059	0.98
	Bank_dummy11	-.093 ^c	-1.057	0.293	-0.097	0.982
	Bank_dummy12	-.024 ^c	-0.268	0.789	-0.025	0.984
	IND_APPROVAL	-.199 ^c	-2.295	0.024	-0.208	0.984
3	INT_DISCRETION	-.255 ^c	-2.956	0.004	-0.264	0.965
	FREQ_COMM	.090 ^c	1.027	0.307	0.095	0.993
	RB_EXPERIENCE	-.038 ^c	-0.418	0.676	-0.039	0.947
	BRANCH_TYPE	-.060 ^d	-0.685	0.494	-0.064	0.926
	BANK_SIZE	-.103 ^d	-1.101	0.273	-0.102	0.813
	Bank_dummy1	.057 ^d	0.67	0.504	0.062	0.98
	Bank_dummy2	-.062 ^d	-0.714	0.477	-0.066	0.963
	Bank_dummy3	.033 ^d	0.373	0.709	0.035	0.937
	Bank_dummy4	.127 ^d	1.483	0.141	0.136	0.968
	Bank_dummy6	-.008 ^d	-0.088	0.93	-0.008	0.952
	Bank_dummy7	-.088 ^d	-1.035	0.303	-0.096	0.982
	Bank_dummy8	.050 ^d	0.58	0.563	0.054	0.95
	Bank_dummy9	.037 ^d	0.426	0.671	0.04	0.974
	Bank_dummy11	-.088 ^d	-1.035	0.303	-0.096	0.982
	Bank_dummy12	-.062 ^d	-0.714	0.477	-0.066	0.963
4	IND_APPROVAL	-.169 ^d	-1.993	0.049	-0.182	0.968
	FREQ_COMM	.144 ^d	1.678	0.096	0.154	0.956
	RB_EXPERIENCE	-.053 ^d	-0.609	0.544	-0.056	0.944
	BRANCH_TYPE	-.075 ^e	-0.854	0.395	-0.079	0.921
	BANK_SIZE	-.140 ^e	-1.493	0.138	-0.138	0.788
	Bank_dummy1	.058 ^e	0.682	0.496	0.063	0.98
	Bank_dummy2	-.076 ^e	-0.888	0.376	-0.083	0.957
	Bank_dummy3	.159 ^e	1.601	0.112	0.148	0.703
	Bank_dummy4	.109 ^e	1.276	0.205	0.118	0.955
	Bank_dummy6	-.031 ^e	-0.358	0.721	-0.033	0.935
	Bank_dummy7	-.108 ^e	-1.272	0.206	-0.118	0.971
	Bank_dummy8	.035 ^e	0.399	0.691	0.037	0.941
	Bank_dummy9	.059 ^e	0.687	0.494	0.064	0.959
	Bank_dummy11	-.108 ^e	-1.272	0.206	-0.118	0.971
	Bank_dummy12	-.054 ^e	-0.637	0.525	-0.059	0.961
FREQ_COMM	.161 ^e	1.896	0.06	0.174	0.948	
RB_EXPERIENCE	-.057 ^e	-0.666	0.507	-0.062	0.943	

a. Dependent Variable: KNOWLEDGE

b. Predictors in the Model: (Constant), Bank_dummy10

c. Predictors in the Model: (Constant), Bank_dummy10, Bank_dummy5

d. Predictors in the Model: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION

e. Predictors in the Model: (Constant), Bank_dummy10, Bank_dummy5, INT_DISCRETION, IND_APPROVAL

APPENDIX 7.2: Results of Stepwise Procedure for Predictors of Additional Business**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	Bank_dummy9		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Bank_dummy4		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	CUST_SATISFACTION		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: ADD_BUSINESS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.255 ^a	0.065	0.055	0.613
2	.337 ^b	0.114	0.093	0.6
3	.502 ^c	0.252	0.226	0.555

a. Predictors: (Constant), Bank_dummy9

b. Predictors: (Constant), Bank_dummy9, Bank_dummy4

c. Predictors: (Constant), Bank_dummy9, Bank_dummy4, CUST_SATISFACTION

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.309	1	2.309	6.144	.015 ^b
1 Residual	33.079	88	0.376		
1 Total	35.389	89			
2 Regression	4.02	2	2.01	5.575	.005 ^c
2 Residual	31.369	87	0.361		
2 Total	35.389	89			
3 Regression	8.934	3	2.978	9.681	.000 ^d
3 Residual	26.455	86	0.308		
3 Total	35.389	89			

a. Dependent Variable: ADD_BUSINESS

b. Predictors: (Constant), Bank_dummy9

c. Predictors: (Constant), Bank_dummy9, Bank_dummy4

d. Predictors: (Constant), Bank_dummy9, Bank_dummy4, CUST_SATISFACTION

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.329	0.069		48.262	0
1 Bank_dummy9	0.489	0.197	0.255	2.479	0.015
2 (Constant)	3.375	0.071		47.693	0
2 Bank_dummy9	0.443	0.194	0.231	2.28	0.025
2 Bank_dummy4	-0.518	0.238	-0.221	-2.178	0.032
3 (Constant)	2.131	0.318		6.699	0
3 Bank_dummy9	0.394	0.18	0.206	2.19	0.031
3 Bank_dummy4	-0.592	0.22	-0.253	-2.686	0.009
3 CUST_SATISFACTION	0.384	0.096	0.375	3.997	0

a. Dependent Variable: ADD_BUSINESS

Excluded Variables^a

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
BRANCH_TYPE	.008 ^b	0.075	0.941	0.008	0.944
BANK_SIZE	.182 ^b	1.712	0.09	0.181	0.923
Bank_dummy1	-.017 ^b	-0.16	0.873	-0.017	0.983
Bank_dummy2	-.040 ^b	-0.383	0.703	-0.041	0.986
Bank_dummy3	-.128 ^b	-1.244	0.217	-0.132	0.992
Bank_dummy4	-.221 ^b	-2.178	0.032	-0.227	0.988
Bank_dummy5	.162 ^b	1.581	0.118	0.167	0.997
Bank_dummy6	-.131 ^b	-1.269	0.208	-0.135	0.983
1 Bank_dummy7	.074 ^b	0.708	0.481	0.076	0.99
Bank_dummy8	.062 ^b	0.597	0.552	0.064	0.985
Bank_dummy10	.213 ^b	2.087	0.04	0.218	0.986
Bank_dummy11	.002 ^b	0.017	0.986	0.002	0.99
Bank_dummy12	.086 ^b	0.83	0.409	0.089	0.986
KNOWLEDGE	.037 ^b	0.354	0.724	0.038	0.996
CUST_SATISFACTION	.353 ^b	3.656	0	0.365	0.996
FINANCIAL_INFO	.052 ^b	0.504	0.615	0.054	0.995
LOAN_LIFE_RELN	.087 ^b	0.837	0.405	0.089	0.994
PERSONAL_CONTACT	-.117 ^b	-1.124	0.264	-0.12	0.983
BRANCH_TYPE	.031 ^c	0.299	0.765	0.032	0.934
BANK_SIZE	.111 ^c	0.979	0.33	0.105	0.791
Bank_dummy1	-.044 ^c	-0.424	0.673	-0.046	0.969
Bank_dummy2	-.064 ^c	-0.622	0.535	-0.067	0.976
Bank_dummy3	-.147 ^c	-1.457	0.149	-0.155	0.985
Bank_dummy5	.151 ^c	1.504	0.136	0.16	0.994
Bank_dummy6	-.160 ^c	-1.574	0.119	-0.167	0.969
Bank_dummy7	.054 ^c	0.53	0.597	0.057	0.982
2 Bank_dummy8	.038 ^c	0.369	0.713	0.04	0.972
Bank_dummy10	.191 ^c	1.902	0.061	0.201	0.976
Bank_dummy11	-.018 ^c	-0.177	0.86	-0.019	0.982
Bank_dummy12	.064 ^c	0.622	0.535	0.067	0.976
KNOWLEDGE	.041 ^c	0.399	0.691	0.043	0.995
CUST_SATISFACTION	.375 ^c	3.997	0	0.396	0.989
FINANCIAL_INFO	.093 ^c	0.904	0.369	0.097	0.965
LOAN_LIFE_RELN	.128 ^c	1.25	0.215	0.134	0.965
PERSONAL_CONTACT	-.074 ^c	-0.709	0.48	-0.076	0.941
BRANCH_TYPE	.059 ^d	0.604	0.548	0.065	0.929
BANK_SIZE	.113 ^d	1.078	0.284	0.116	0.791
Bank_dummy1	-.036 ^d	-0.374	0.71	-0.041	0.968
Bank_dummy2	-.092 ^d	-0.967	0.336	-0.104	0.971
Bank_dummy3	-.084 ^d	-0.879	0.382	-0.095	0.955
Bank_dummy5	.083 ^d	0.872	0.386	0.094	0.958
Bank_dummy6	-.109 ^d	-1.145	0.255	-0.123	0.95
Bank_dummy7	.038 ^d	0.403	0.688	0.044	0.98
3 Bank_dummy8	.115 ^d	1.199	0.234	0.129	0.936
Bank_dummy10	.165 ^d	1.765	0.081	0.188	0.971
Bank_dummy11	-.063 ^d	-0.663	0.509	-0.072	0.969
Bank_dummy12	.012 ^d	0.128	0.899	0.014	0.957
KNOWLEDGE	-.069 ^d	-0.708	0.481	-0.077	0.918
FINANCIAL_INFO	.019 ^d	0.193	0.848	0.021	0.928
LOAN_LIFE_RELN	.030 ^d	0.304	0.762	0.033	0.898
PERSONAL_CONTACT	-.189 ^d	-1.922	0.058	-0.204	0.875

a. Dependent Variable: ADD_BUSINESS

b. Predictors in the Model: (Constant), Bank_dummy9

c. Predictors in the Model: (Constant), Bank_dummy9, Bank_dummy4

d. Predictors in the Model: (Constant), Bank_dummy9, Bank_dummy4, CUST_SATISFACTION

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ANNEX A

BANK LENDING TO SMEs: SURVEY OF RELATIONSHIP MANAGERS/LOAN OFFICERS ON LENDING CRITERIA AND PRACTICES IN NIGERIAN BANKS

Purpose of the Study:

This survey project is part of a research study on *The Microstructure of Bank Lending to SMEs in Nigeria*. The questionnaire is being administered on selected *Relationship Managers/Loan Officers* in the top 12 Nigerian Banks. The survey seeks to investigate the following:

- (a) The characteristics of SME borrowers which lenders (banks) consider important or influential when appraising SME loan applications
- (b) The characteristics of lenders and their environment which in turn influence their inclination to lend to SME borrowers
- (c) The determinants of loan contract terms, lending preferences and lending approaches by Nigerian banks
- (d) The economic value or benefits of lending relationships to Nigerian banks

Personal Information:

Respondent's Position in the Bank (Required).....

How long have you been in this role in the bank? (Required).....

How long have you been in the bank overall? (Required).....

Guidance Notes:

- (1) This survey is for loan officers who are involved in *appraising* SME loan applications and/or involved in *disbursing, collecting or reviewing* bank loans extended to SMEs resident in Nigeria.
- (2) For the purpose of this survey, we define SMEs as *enterprises with total asset size not exceeding ₦500 Million and with employees not exceeding 300*. SME loans are therefore loans granted to firms of this nature, irrespective of loan size. The term 'SME loans' refers to all kinds of credit facilities to SMEs, including term loans, overdrafts, commercial mortgages, lease financing and receivables financing (factoring)
- (3) The questionnaire is structured into five sections. Section A examines the relative importance of borrower characteristics as determinants of the decision to approve or reject a loan. Section B examines the relative importance of lender characteristics and their environment in SME lending decisions, while section C examines the determinants of SME credit terms. Section D takes a look at your bank's lending administration structure and the role of loan officers in SME loan decision-making. Finally, section E examines the economic value derivable from relationship lending.
- (4) Completing the entire questionnaire should take approximately **25 minutes**. Please note that the return of the completed questionnaire will be taken to imply that you have given consent to participate in this research.
- (5) All information collected about you during the course of the research will be kept strictly confidential. We do not require any form of personal identification. Your participation in this research is strictly anonymous. You will be assigned a unique identification (ID) number, but any information about you will be removed so that you cannot be recognised from it.
- (6) The information obtained from this exercise will be used *solely for academic purposes*. The data collected will be analysed using appropriate techniques in survey data analysis. The results might then be published as a contribution to the body of knowledge and could be used for policy making. For this reason, please ensure

your answers reflect as much as possible true, valid and reliable description of the state of affairs relating to your role as a loan officer and your bank's practices.

- (7) All matters concerning confidentiality and the use of confidential information have been reviewed and approved by the University of Glasgow's College of Social Sciences Research Ethics Committee.

SECTION A: IMPORTANCE OF BORROWER CHARACTERISTICS

This section examines the relative importance of borrower characteristics in determining the decision to approve or reject a loan. It also examines the contributory factors to the riskiness of SME loans in Nigeria.

Characteristics of SME Borrowers

- How important are the following *SME borrower characteristics* for your bank/branch in deciding whether to approve or reject an SME loan application?

Ranking Codes: 1– Unimportant | 2– Moderately Important | 3- Important | 4- Very Important

Applicant Firm/Borrower Characteristics	Please rank all			
	1	2	3	4
<i>Purpose of Loan (e.g. working capital, project finance, investment etc)</i>				
<i>Loan amount</i>				
<i>Loan security (i.e. availability of marketable collateral)</i>				
<i>Presentation of business plan (showing projected income from business or project)</i>				
<i>Profitability of business</i>				
<i>Firm's size (in terms of total assets)</i>				
<i>Firm's age (i.e. measure of firm's operational stability)</i>				
<i>Availability of audited financial statements (i.e. firm's transparency)</i>				
<i>Firm's leverage (i.e. value of outstanding debts, if any)</i>				
<i>Firm's organisational form (i.e. whether firm is a sole proprietorship, partnership or corporation)</i>				
<i>Firm's liquidity (i.e. % of cash to total assets)</i>				
<i>Nature of Business (i.e. firm's sector of activity)</i>				
<i>Firm's credit rating (as determined by previous loan repayments or number of delinquencies)</i>				
<i>Stability of demand for firm's products and/or services</i>				
<i>Existence of deposit relationship with client (e.g. current or savings account)</i>				
<i>Firm's deposit account balance</i>				
<i>Existence of loan relationship with client or lines of credit</i>				
<i>Existence of financial management service relationship with client (e.g. transaction services, cash management services, asset finance services or other credit-related services, trust services)</i>				
<i>Length or duration of relationship with the bank</i>				
<i>Exclusivity of relationship (i.e. whether the loan applicant firm uses only your bank as provider of financial services or also other banks)</i>				
<i>Distance to SME customer (i.e. physical proximity to applicant)</i>				
<i>Physical observation of business</i>				
<i>Owners' credit rating (determined by previous loan repayments or number of delinquencies)</i>				
<i>Owners' educational attainment/professional training</i>				
<i>Owner's business experience</i>				
<i>Owner's personal guarantee</i>				
<i>Owners' personal wealth</i>				
<i>Owners' equity stake/contribution</i>				

Contributory Factors to Riskiness of SME Loans

2. A number of factors contribute to the riskiness of SME loans in Nigeria. How would you rank the significance of these factors?

Ranking Codes: 1 – Insignificant | 2 – Moderately significant | 3 – Significant | 4- Very significant

Contributory Factors to the Riskiness of SME Loans	<i>Please rank all</i>			
	1	2	3	4
<i>High incidence of diversion and/or misuse of funds</i>				
<i>Weak management capacity or competence</i>				
<i>Shortage of information and absence of formal record-keeping</i>				
<i>Inability of firms to service debts</i>				
<i>Investment in risky activities or volatile economic sectors</i>				
<i>Inability to exploit existing opportunities due to limited scope of business operations</i>				
<i>Poor quality of projects</i>				
<i>Predominantly weak ownership structure, providing opportunities for skewed incentives</i>				
<i>High costs of doing business caused by lack of infrastructure and weak industrial policies</i>				
<i>Problem of developing internally effective screening, appraisal and supervisory procedures for small firm loans</i>				
<i>Term lending outside of bank's scope and specialization</i>				

SECTION B: IMPORTANCE OF LENDER CHARACTERISTICS AND ENVIRONMENTAL FACTORS

This section examines the relative importance of lender characteristics and environmental factors in influencing your bank's willingness to lend to SMEs.

Lender Characteristics, Environmental Factors and Willingness to Lend

3. How important are the following factors in determining your bank's willingness to lend to SME customers?

Ranking Codes: 1– Unimportant | 2– Moderately Important | 3- Important | 4- Very Important

Lender Characteristics & Environmental Factors	<i>Please rank</i>			
	1	2	3	4
<i>Influence of regulatory requirements and legal constraints (e.g. capital adequacy, reserve requirements, liquidity ratio, policy rates, etc)</i>				
<i>Bank's lending policies towards SMEs</i>				
<i>Proportion of bank's asset portfolio in SME loans</i>				
<i>Sectoral distribution of outstanding loans to SMEs</i>				
<i>History of previous SME loan performance</i>				
<i>Risk profile of SME sector</i>				
<i>Bank's deposit level and financial stability</i>				
<i>Level of bank deposits</i>				
<i>Demand facing banks in the SME loan market</i>				
<i>Competition from other banks for SME loans</i>				
<i>Interest rates or returns from competing assets/investments, e.g. treasury bills</i>				
<i>Maturity structure of bank's security holdings</i>				
<i>Specialization of bank's lending officers</i>				
<i>High transaction costs associated with SME loans (e.g. administrative costs, legal costs and information acquisition costs)</i>				
<i>Adequacy of information on the true financial condition and performance of the SME borrower</i>				

<i>Enforcement actions from regulators such as maintenance of capital-asset ratio or reserve requirements</i>				
<i>General macroeconomic conditions</i>				

Financial Crisis and SME Lending Policies

4. Have your bank's SME lending policies and/or risk preference changed at any time during the past five years as a result of the recent financial crisis?

Yes No

5. (a) If your answer to question (4) is 'no', then please state your reasons below:

.....

.....

.....

5. (b) If your answer to question (4) is 'yes', which of the following changes have taken place? *Please tick all that apply:*

	Changes in lending decisions, preferences or policies as a result of the recent financial crisis	Tick
A	<i>More stringent appraisal of SME loan applications</i>	
B	<i>General reduction in lending to SMEs</i>	
C	<i>General reduction in lending to SMEs and a corresponding increase in lending to larger firms</i>	
D	<i>Decision to reduce credit to some sectors (e.g. real estate, capital markets, etc)</i>	
E	<i>Decisions to diversify activities away from traditional lending (e.g., into fee-based services, asset finance, etc.)</i>	
F	<i>Higher risk premium charges on certain SME loans</i>	
G	<i>More stringent collateral requirements</i>	
H	<i>Preference for shorter loan maturities</i>	
I	<i>Greater weight given to credit rating of SME borrowers</i>	
J	<i>Increase in the acquisition of soft information on SME borrowers</i>	
K	<i>Increase in SME lending as a result of government initiatives</i>	
	<i>Others (Please specify)</i>	
L		
M		

SECTION C: DETERMINANTS OF SME LOAN CONTRACT TERMS

This section covers your bank's current loan pricing decisions, the riskiness of SME loans, collateral requirements and loan maturity.

SME Loan Pricing

6. What is the frequency of the following practices in the **pricing of SME loans** in your bank today?

Ranking Codes: 1 – Never | 2 - Sometimes | 3 – Often | 4 – Always

(Please tick)

Loan Pricing Decisions for SMEs	1	2	3	4
<i>My bank charges a higher interest rate to SME customers than to large customers</i>				
<i>My bank charges a lower interest rate to older and more established firms than to younger firms</i>				
<i>My bank offers lower interest rates to first time customers in order to gain their loyalty</i>				
<i>My bank offers lower interest rates to repeat customers (i.e. customers with longer relationship with my bank)</i>				
<i>My bank tends to charge young firms lower interest rates at the beginning of their relationship with us with the hope of making higher returns in later years when their business has become more established</i>				
<i>My bank charges a lower interest rate for firms with existing deposit account with my bank</i>				
<i>My bank charges a lower interest rate for firms with exclusive lending relationship with us</i>				
<i>My bank charges a higher interest rate for SME loan applicants that cannot meet the bank's collateral requirements</i>				
<i>My bank's interest rate is a decreasing function of the applicant firm's credit rating</i>				
<i>My bank's interest rate is a decreasing function of the business owner's credit rating</i>				
If your bank follows practices not indicated above, please describe them below also indicating their frequency (1-4)				

Riskiness of SME Loans

7. If your bank *often* or *always* charges a higher interest rate to SMEs than to large firms, what is/are the reason(s)? (Please rank the reasons for your answer)

Ranking Codes: 1– Strongly disagree | 2- Disagree | 3–Agree | 4 – Strongly agree

(Please tick)

Reasons for higher risk premium on SME loans	1	2	3	4
<i>My bank's cost of funds is higher for small loans than for large ones</i>				
<i>Lending to SMEs is riskier because they are more difficult to monitor</i>				
<i>Lending to SMEs is riskier because they are more vulnerable to changes in the external environment</i>				
<i>Lending to SMEs is riskier because they have a high failure rate</i>				
<i>The administrative costs of SME loans are higher</i>				
<i>SME loans constitute a greater proportion of my bank's loan loss reserves</i>				

SME Loan Collateral Requirements

8. What is the frequency of the following practices in setting **collateral requirements for SME loans**?

Ranking Codes: 1 – Never | 2 - Sometimes | 3 – Often | 4 – Always

(Please tick)

Collateral Requirements for SME Loans	1	2	3	4
<i>My bank requests collateral from SMEs before making loans</i>				
<i>My bank's collateral requirement amounts to 100% of loan size</i>				
<i>My bank's collateral requirements differ between large and small firms</i>				
<i>My bank's collateral requirements are different for loans to new customers/start-ups as against loans to existing customers</i>				
<i>My bank's collateral requirement depends on the riskiness of the project being financed</i>				
<i>My bank's collateral requirement depends on the applicant firm's credit rating or number of delinquencies</i>				
<i>My bank's collateral requirement depends on the entrepreneur/owner's credit rating or number of delinquencies</i>				
<i>My bank's collateral requirement depends on the strength (length) of borrower-bank relationship</i>				
<i>My bank's collateral requirement depends on the loan size, regardless of whether the firm is large or small</i>				
<i>My bank's collateral requirement depends on the strength of competition for SME lending (i.e., other lenders' collateral requirements)</i>				
<i>My bank's collateral requirement depends on the business cycle/macroeconomic conditions</i>				
If your bank follows practices not indicated above, please describe them below also indicating their frequency (1-4)				

9. What types of collateral are most frequently accepted by your bank from SME loan customers? Please rank the following collateral types in order of acceptance, **from 1-3, 1 being the least accepted, 2 being accepted, and 3 being the most accepted**

Types of Collateral Accepted	1	2	3
Real Estate (land and buildings)			
Vehicles and business equipment			
Goods in stock (inventory)			
Household goods			
Cash and other liquid assets			
Bank and personal guarantees			

SME Loan Maturity

10. What is the frequency of the following practices in setting **the maturity of SME loans**?

Ranking Codes: 1 – Never | 2 - Sometimes | 3 – Often | 4 – Always

(Please tick)

SME Loan Maturity Decisions	1	2	3	4
<i>My bank prefers short term lending</i>				
<i>My bank restricts medium-long term loans to valued small firm customers</i>				
<i>My bank lends short, medium and long on case by case considerations</i>				
<i>Loan maturity is based on borrowers' request</i>				

<i>Loan maturity is based on the nature of project being financed</i>				
<i>Loan maturity decisions are determined by the level of uncertainty in the macroeconomic environment</i>				
If your bank follows practices not indicated above, please describe them below also indicating their frequency (1-4)				

11. In your assessment, how would you describe the number (in percentage terms) of SME loans granted by your bank/branch within the following maturity bands?

SME Loan Maturity Period	% of total SME Loans
Less than 6 months maturity	
6 – 24 months maturity	
24 – 60 months maturity	
Above 60 months maturity	
Total	100%

SECTION D: THE ROLE OF LOAN OFFICERS IN LOAN DECISION MAKING

This section seeks to examine your bank's lending administration structure and the role of loan officers in loan decision-making within your bank's lending administration process.

Lending Administration Structure

12. Does your bank have a separate specialized department responsible for managing SME lending relations?
Yes/No

13. Which of the following best describes your bank's SME lending administration policy?

- (a) My bank practices a wholly centralised SME lending strategy (in which case all SME lending decisions are taken at the head office) ☐
- (b) My bank practices a wholly decentralised SME lending strategy (in which case all SME lending decisions are taken at the branch levels) ☐
- (c) My bank practices a mix of centralised and decentralised strategy with respect to all business lending (i.e. some lending decisions are taken at the head office, while others are taken at the branch levels) ☐

14. If you selected (c) in question 13 above, please indicate which decisions or functions are centralised and which ones are decentralised. If some particular functions/decisions are both centralised and decentralised, please tick both boxes.

<i>Functions/Decisions</i>	<i>Centralised</i>	<i>Decentralised</i>
Loan application appraisal		
Loan approval		
Ongoing loan monitoring/risk management		
Periodic loan review		
Recovery of non-performing loans		

15. If some particular functions/decisions are both centralised and decentralised, please explain the relevant criterion (or criteria) – e.g. whether it depends on the size of the loan (please specify the threshold) and/or some other criterion – for each function/decision.

.....

.....

.....

.....

Hierarchy of SME Loan Decision-Making

16. How many functional levels of authority beyond the initial level of contact does it take to successfully process an SME loan in your bank?

(Please circle against the following loan amounts)

<i>Loan amount</i>	<i>Number of functional levels</i>				
Less than ₦100, 000	None	1	2	3	>3
₦100, 000 to less than ₦500, 000	None	1	2	3	>3
₦500, 000 to less than ₦2, 500,000	None	1	2	3	>3
₦2, 500,000 to less than ₦5, 000,000	None	1	2	3	>3
₦5, 000,000 to less than ₦10, 000,000	None	1	2	3	>3
₦10, 000,000 to less than ₦20, 000,000	None	1	2	3	>3
₦20, 000,000 to less than ₦50, 000,000	None	1	2	3	>3
₦50, 000,000 and above	None	1	2	3	>3

Loan Officer Lending Discretion

Lending Approval Limit

17. Do you have any authority as a loan officer to independently approve SME loans in accordance with your bank's lending policies?

Yes **No**

18. Please indicate the **maximum** loan amount that you can approve as a loan officer autonomously.

₦.....

Discretion in Setting Interest Rates

19. Do you have some degree of discretion or leeway in setting interest rates on SME loans?

Yes ☐ **No** ☐

20. If yes to (19), what is your typical margin of discretion? (in basis points, e.g. 50 basis points for 0.5%)

..... Points

Loan Officer Incentives

21. Is the amount of compensation or bonus that you receive as a loan officer significantly related to the *size of your loan portfolio*? (Volume incentives)

Yes ☐ No ☐

22. Is the amount of compensation or bonus that you receive as a loan officer significantly related to the *profitability of your loan portfolio*? (Profit incentives)

Yes ☐ No ☐

23. Is the amount of compensation or bonus that you receive as a loan officer significantly related to the *size of your deposit mobilization*? (Deposit mobilization incentives)

Yes ☐ No ☐

SECTION E: ECONOMIC BENEFITS OF RELATIONSHIP LENDING TO BANKS

This section seeks to evaluate the nature of bank-borrower relationships in your bank as well as the economic value or benefits derivable from such lending relationships.

Definition of Relationship Lending:

Please note that the definition of *relationship lending* in this questionnaire may be different from that used by your bank. 'Relationship lending' is used here to denote a situation in which a bank is willing to provide lending mostly on the basis of a previous relationship with the borrower such as a previous loan, savings deposit, long-term deposits, etc. More precisely, with relationship lending, financing is provided primarily on the basis of 'soft information', e.g., borrower characteristics, credit history with the bank, loan size, purpose of the loan, etc. Relationship lending involves frequent and personalized contact between the loan officer and the small firm, its owners/managers, or even the local community in which it operates. Relationship lending is typically associated with decentralised loan approval and risk management.

Nature of Bank-Borrower Relationships

24. To what extent would you agree with the following statements about the nature of your bank's relationship with its SME customers?

Ranking Codes: 1– Strongly disagree | 2- Disagree | 3–Agree | 4 – Strongly agree

(Please tick)

Nature of bank-borrower relationships	1	2	3	4
<i>My bank acquires knowledge of the firm's business and obtains proprietary information before granting a loan</i>				
<i>My bank maintains a relationship with borrowers throughout the loan life</i>				
<i>My bank maintains personalized and frequent contact with SME customers</i>				
<i>My bank maintains contact with the local community where our SME firms operate</i>				
<i>Decision about SME loan approval and risk management is often decentralised (i.e. made by local business managers)</i>				
<i>In my bank, SME lending decisions are rather rule-based, i.e. depend mainly on hard and fast rules (objective or pre-determined criteria) and the sole evaluation of the loan application</i>				

Quality of Relationship/Information Acquisition

Frequency of Meetings

25. How often do you meet with or visit your SME customers face to face?

- (a) More than once a month ☐
- (b) At least once a month ☐
- (c) At least once in 2 months ☐
- (d) At least once in 3 months ☐
- (e) At least once in 6 months ☐
- (f) Not at all ☐
- (g) Other frequency levels (please specify).....

Frequency of Communication

26. How often do you communicate with your SME customers using non-physical methods such as standard mail, emails or telephone?

- (a) More than once a month ☐
- (b) At least once a month ☐
- (c) At least once in 2 months ☐
- (d) At least once in 3 months ☐
- (e) At least once in 6 months ☐
- (f) Not at all ☐
- (g) Other frequency levels (please specify).....

Knowledge of Borrower's Business Activities

27. How well do you know your customers' business model and activities?

- (a) I have no knowledge
- (b) I have fair knowledge
- (c) I have good knowledge
- (d) I have very good knowledge

Frequency of Interaction with the Local Market Community

28. How often do you acquire information about your customers' businesses through contact with their suppliers, customers, competitors, or neighbouring businesses?

- (a) More than once a month ☐
- (b) At least once a month ☐
- (c) At least once in 2 months ☐
- (d) At least once in 3 months ☐
- (e) At least once in 6 months ☐
- (f) Not at all ☐
- (g) Other frequency levels (please specify).....

29. Do factors such as the knowledge of an applicant firm and existing relationships with the firm/firm owner influence the setting of loan terms (e.g. interest rates, collateral requirements, loan maturity, etc)? Or are such factors of little practical relevance with respect to SME loan application? *(Please tick one)*

- (a) Such factors are important ☐
- (b) Marginally important ☐
- (c) Irrelevant ☐

Economic Benefits/Costs of Bank-Borrower Relationships

30. To what extent would you agree with the following statements concerning the economic benefits/costs of relationship lending (Please note that the statements below represent a mix of both positive and negative scenarios)

Ranking Codes: 1– Strongly disagree | 2- Disagree | 3– Agree | 4- Strongly agree

<i>(Please tick)</i>				
Economic Value of Relationship Lending	1	2	3	4
<i>(a) In my bank, SME lending is mostly based on relationship lending as defined above</i>				
<i>Economic Benefits of Relationship Lending</i>				
<i>(b) Relationship lending allows the bank to take better lending decisions (e.g., to accommodate good borrowers and screen out bad borrowers)</i>				
<i>(c) Relationship lending (i.e. multiple interactions with SME customers over time and/or across products) results in reduced screening and monitoring costs</i>				
<i>(d) Relationship lending (based on personalized and frequent contact of the bank with SME customers) results in greater customer satisfaction</i>				
<i>(e) Relationship lending often generates additional business for my bank (e.g., additional deposits, future lending business, investment banking deals, fee-based services, etc</i>				

<i>(f) Relationship lending has improved the performance of my branch's SME loan portfolio</i>				
<i>(g) Relationship lending has reduced the amount of my bank's/branch's loan loss provisions associated with SME lending</i>				
<i>Costs of Relationship Lending</i>				
<i>(h) 'Soft information' is hardly adequate and, hence, lending decisions based on it are often wrong</i>				
<i>(i) Investing in relationships is not cost-effective for my bank and as such the amount of SME lending that my bank is able to provide is reduced</i>				
<i>(j) Most of our existing SME customers use multiple banks for their banking services so that it is too competitive investing in building relationships</i>				
<i>(k) Sometimes, relationship lending results in an undue relaxation by the bank of criteria used in evaluating loan applications (especially those made by longer-term bank customers)</i>				
<i>(l) Since traditional SME lending is costly and risky, my bank prefers to finance SMEs through other means (e.g., asset-based lending, leasing, etc) and to provide other services to them (e.g. financial management services, etc)</i>				
<i>Net Benefits from Relationship Lending</i>				
<i>(n) For overall bank profitability, the benefits of relationship lending outweigh its costs</i>				

*** END***

THANK YOU FOR YOUR PARTICIPATION!

ANNEX B

CODING FRAMEWORK FOR SURVEY DATA

Sample Split Codes (Demographic Characteristics of Loan Officers)

Q0A – Relationship Banking Experience

Response Codes:

Dummy 1 - “< 5 years R/B experience”

Dummy 2 - “≥ 5 years R/B experience”

Q0B – Branch Type

Response Codes:

Dummy 1 – ‘Retail Market Business Dominated Branches’ (i.e. Loan officers serving low end SME customers)

Dummy 2 – ‘Corporate and Commercial Business Dominated Branches’ (i.e. Loan officers serving high end SME customers)

Note:

Branches in Alimosho, Ojo and Amuwo Odofin Local government areas (LGAs) are designated as ‘Retail Business Branches’, while branches in Ikeja, Lagos Island and Airport Road, Oshodi/Isolo LGAs are designated as ‘Commercial Business Branches’. Using this classification method, a total of 57 loan officers are domiciled in retail branches, while 64 loan officers are domiciled in corporate/commercial branches.

Main Codes

Q1 Characteristics of SME Borrowers

Q1A-Q1AB (28 variables)

Ranking Codes:

- 1- ‘Unimportant’
- 2- ‘Moderately Important’
- 3- ‘Important’
- 4- ‘Very Important’

Q2 Contributory factors to Riskiness of SME Loans

Q2A-K (11 variables)

Ranking Codes:

- 1- ‘Insignificant’
- 2- ‘Moderately Significant’
- 3- ‘Significant’
- 4- ‘Very Significant’

Q3 Lender Characteristics, Environmental Factors and Willingness to Lend

Q3A-P (17 variables)

Ranking Codes:

- 1- 'Unimportant'
- 2- 'Moderately Important'
- 3- 'Important'
- 4- 'Very Important'

Q4: Financial Crisis and SME Lending

Response Codes:

Dummy 0 – 'No'

Dummy 1 – 'Yes'

Q5A: Reasons for 'No' Answer in Q4

Response Codes:

Dummy 0 – 'Reasons Not Provided'

Dummy 1 – 'Reasons Provided'

(11 entries were recorded)

Q5B: Changes in Lending Decisions, Preferences or Policies

Q5B_A-K (11 Variables)

Response Codes:

Dummy 0 – 'No change' (Represented by ☐)

Dummy 1 – 'Change' (Represented by ☒)

OTHER_CHANGES - Other changes due to the crisis specified (4 entries were recorded)

Q6: SME Loan Pricing

Q6A—J (10 variables)

Ranking Codes:

- 1- 'Never'
- 2- 'Sometimes'
- 3- 'Often'
- 4- 'Always'

OTHER_PRICING – Other loan pricing practices specified (4 entries were recorded)

Q7: Riskiness of SME Loans

Q7A-F (6 variables)

Ranking Codes:

- 1- 'Strongly Disagree'
- 2- 'Disagree'
- 3- 'Agree'
- 4- 'Strongly Agree'

Q8: SME Loan Collateral Requirements

Q8A-K (11 variables)

Ranking Codes:

- 1- 'Never'
- 2- 'Sometimes'
- 3- 'Often'
- 4- 'Always'

OTHER_COLLATERAL – Other determinants of collateral specified (2 entries were recorded)

Q9: Types of Collateral Accepted

Q9A-F (6 variables)

Ranking Codes:

- 1 – 'Least Accepted'
- 2 - 'Accepted'
- 3- 'Most Accepted'

Q10: SME Loan Maturity

Q10A-F (6 variables)

Ranking Codes:

- 1- 'Never'
- 2- 'Sometimes'
- 3- 'Often'
- 4- 'Always'

OTHER_MATURITY – Other determinants of loan maturity specified (1 entry was recorded)

Q11: SME Loan Maturity Period

Q11A-D (4 Variables)

Response Code:

Quantitative Amounts (expressed as % of total SME Loans)

Q12: SME Lending Department

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes'

Q13: SME Lending Structure

Response Codes:

1 – 'Wholly Centralised'

2- 'Wholly Decentralised'

3- 'Mixed'

Q14: Centralisation/Decentralisation of Functions

Q14A-E (5 variables)

Response Codes:

1 – 'Centralised'

2 - 'Decentralised'

3 - 'Mixed'

Q15: Criteria/Threshold for Centralisation/Decentralisation of Lending Functions

Response Codes:

Dummy 0 – 'Criteria Not Provided' (i.e. blank spaces were not completed)

Dummy 1 – 'Criteria Provided' (i.e. blank spaces were completed)

LN_CRITERIA – Lending criteria provided (29 entries were recorded)

Q16: Hierarchy of SME Loan Decision Making (Number of Functional Levels in SME Loan Approval)

Q16A-H (8 Variables)

Response Codes:

0 – 'None' – i.e. no functional level

1 – '1 functional level'

2 - '2 functional levels'

3 - '3 functional levels'

4 – '>3 functional levels'

Q17: Independent Lending Approval

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes' (9 entries were recorded)

Q18: Approval Limit (Maximum Amount for Autonomous Lending)

Response Code:

Quantitative Amount (expressed in Naira) – 9 entries were recorded

Q19: Discretion in Setting Interest Rates

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes' (18 entries were recorded)

Q20: Typical Margin of Discretion

Response Code:

Quantitative Amount (expressed in basis points) – 18 entries were recorded

Q21: Loan Volume Incentives

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes'

Q22: Loan Profitability Incentives

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes'

Q23: Deposit Mobilization Incentives

Response Codes:

Dummy 0 - 'No'

Dummy 1 – 'Yes'

Q24: Nature of Bank Borrower Relationship

Q24A-F (6 variables)

Ranking Codes:

- 1- 'Strongly Disagree'
- 2- 'Disagree'
- 3- 'Agree'
- 4- 'Strongly Agree'

Q25: Frequency of Meetings

Response Codes:

- 0- 'Not at all'
- 1- 'At least once in 6 months'
- 2- 'At least once in 3 months'
- 3- 'At least once in 2 months'
- 4- 'At least once in a month'
- 5- 'More than once a month'
- 6- 'Other Frequency Levels – e.g. daily or more than once a week'

Q26: Frequency of Communications

Response Codes:

- 0- 'Not at all'
- 1- 'At least once in 6 months'
- 2- 'At least once in 3 months'
- 3- 'At least once in 2 months'
- 4- 'At least once in a month'
- 5- 'More than once a month'
- 6- 'Other Frequency Levels – e.g. daily or more than once a week'

Q27: Knowledge of Borrower's Business

Response Codes:

- 0- 'No knowledge' (no entry was recorded)
- 1- 'Fair knowledge'
- 2- 'Good knowledge'
- 3- 'Very good knowledge'

Q28: Frequency of Interaction with Local Market Community

Response Codes:

- 0- 'Not at all'
- 1- 'At least once in 6 months'
- 2- 'At least once in 3 months'
- 3- 'At least once in 2 months'
- 4- 'At least once in a month'
- 5- 'More than once a month'
- 6- 'Other Frequency Levels' – e.g. as the need arises or on case-by-case considerations depending on the nature of customer's business.

Q29: Influence of Borrower Knowledge on Setting of Loan Terms

Response Codes:

- 0- 'Irrelevant'
- 1- 'Marginally Important'
- 2- 'Important'

Q30: Economic Benefits/Costs of Bank-Borrower Relationships

Q30A-M (13 variables)

Ranking Codes:

- 1- 'Strongly Disagree'
- 2- 'Disagree'
- 3- 'Agree'
- 4- 'Strongly Agree'