

## An Empirical Analysis of the Relationship Between Credits to Smes and Economic Growth in Nigeria

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### Abstract

In spite of the growing literature on SME -economic growth nexus, empirical studies that divulge into how credit facilities to SMEs and Credit to other private sector impact on economic growth are scanty. Consequently, this study investigates the relationship between credits to SMEs on economic growth using quarterly time series data spanning from 1981Q1-2013Q4. It is expected that the study will aid in increasing the volume of the empirical literature so as to reduce the lacuna. Cointegration methods and granger causality method were employed on the analysis. A positive significant impact of credit to SMEs and credit to other private sector on economic growth in Nigeria was identified. Policies aimed at increasing access to credit are therefore of higher greater essence to enhancing economic growth.

**Key words:** Credit to SMEs, Credit to private Sector, Economic Growth.

### 1.0 Introduction

In both developing and developed countries, small and medium scale firms play important roles in the process of industrialization and economic growth. Apart from increasing per capita income and output, SMEs create employment opportunities, enhance regional economic balance through industrial dispersal and generally promote effective resource utilization considered not only critical but also as a catalyst to economic development and growth. According to Ayyagari *et al.* (2007), in high-income countries formal SMEs contribute up to 50 percent of GDP on the average.

Furthermore, in many economies majority of jobs are provided by SMEs. In OECD countries, for example, SMEs with less than 250 employees employ two-thirds of the formal work force (Beck *et al.*, 2008). Using country-level data, Ayyagari *et al.* (2007) estimated that, on average, SMEs account for close to 60 percent of employment in the manufacturing sector. Similarly, according to SMEs Performance Review (EC, 2009), between 2002 and 2008, the number of jobs in SMEs increased at an average annual rate of 1.9 percent while the number of jobs in large enterprises increased by only 0.8 percent signaling that SMEs do better than large enterprises. However, the seminal role played by SMEs notwithstanding its development is everywhere constrained by inadequate funding and poor management. The unfavorable macroeconomic environment has also been

identified as one of the major constraints which often encourage financial institutions to be risk-averse in funding small and medium scale businesses. The reluctance on the part of financial institutions to fund SMEs can be explained by the insufficient capital base of banks and information asymmetry that often exists between SMEs and lending institutions.

The Manufacturing (including Micro, Small and Medium Enterprises) sector is acknowledged to have huge potential for employment generation and wealth creation in any economy. Yet in Nigeria, the sector has stagnated and remained relatively small in terms of its contribution to GDP or to gainful employment. Activity mix in the sector is also quite limited being dominated by import dependent processes and factors. Although there is no reliable data, imprecise indicators show that capacity utilization in the sector has improved perceptibly in the period since 1999, but the sector is still faced with a number of constraints with lack of credit availability as the principal constraint. Credit is the largest element of risk in the books of most banks and failures in the management of credit risk, by weakening individual banks and in some cases the banking system as a whole, have contributed, to various ramifications of financial instability. A greater understanding of the nature of credit risk, leading to improved measurement and management, would help to strengthen the international financial system vis-à-vis the small and medium enterprises in the long-run. An increasing amount of research on credit risk is being carried out within financial firms, central banks, regulators and universities. Access to credit enhances the productive capacity of businesses. Business and enterprises with adequate financial access have greater potential to grow. Studies for business enterprises in Africa have shown that SMEs are credit constrained ( Soderbom 2000).

SMEs in Nigeria have not received the much needed attention and financing for effective and viable operation. The banks reluctance on SMEs lending potentially creates problem to the Nigeria's economy, since it is widely known that SMEs play a vital role in the economy, especially in the creation of new employments and reducing poverty. In less developed countries where there is a dearth of information on the operations of SMEs, the situation degenerates into total risk-aversion by financial institutions in funding SMEs. Such risk-averse behaviour can ultimately affect the performance of monetary policy through the credit channel of policy transmission and perhaps snowball into financial instability in the system.

According to Kazora (2006), emerging entrepreneurs consider the principal impediments to their business growth to be; financial constraints, financial management, market constraints, inadequate business premises and tenure arrangement. According to David (2003), the challenge facing SME's in many developing countries are segmental. The most worrisome among these challenges are funding and funds management. Most new business enterprises are not very attractive prospects for banks and qualified financial managers as bank want to minimize their risk profile and financial managers needs for pay which SME's cannot afford to pay. In Nigeria, the situation is not very different, until recently when the Banker's committee intervened in 2001 with a scheme themed the small and medium industries equity investment scheme (SMIEIS). The scheme relegated to the background government credit schemes that are not well thought out and

implemented, but still nothing is done to equip either by training or workshops with financial management skills.

However, over the years, several studies have been conducted to investigate the impact of SMEs on economic growth and development in Nigeria. Thus, many of such studies employed primary data that captured the view of respondents but with a lot of inconsistencies in estimation procedure. Therefore, the instruments need to be subjected to more statistical tests and scrutiny in order to establish a more robust, valid and reliable result. Also, majority of such studies used small samples and focused on a certain geographical locations and regions. Therefore the findings in the area might not be able to represent the correct situation in the rest of the country and any effort to generalize might lead to undesirable consequences. The problem is that the majority of SMEs in Nigeria face different problems from different sectors and business areas. **This study therefore involves the use of large samples and a broader geographical base for the** whole country for better cross validation purposes. Most of such studies focused basically on the effect of SMEs on economic growth, without examining the relationship between credits to SMEs, credit to private sector on economic growth. Thus, in this study both unit root test, OLS regression, granger causality test method were employed to determine the appropriate form of data and examine the relationship between the variables of interest. Therefore the objective of this study is to empirically examine the relationship between credit to SMEs, and credit to private sector on economic growth in Nigeria.

Therefore this study is necessary as it examines the relationship between credits to SMEs, credit to other private sector on economic growth, and give measures that will enhance the investment climate of both SMEs and Private investment in Nigeria. It will also form a basis for further research investigations as well as contributing to available findings that could be used by policy makers in designing and implementing policies targeted at economic growth via investment.

In view of the foregoing therefore, this study made use of quarterly time series data to provide some important empirical investigation on the relationship between credit to SMEs, and credit to other private sector on economic growth in Nigeria for the period (1981Q1-2013Q4) in order to fill in academic vacuum existing in the study area.

## **2.0 THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE**

### **2.1 Theoretical Framework:**

SMEs have received considerable attention from researchers and policy-makers around the world. However, the theoretical underpinning of this study is situated based on Schumpeter financial growth theory and Endogenous growth theory.

#### **2.1.1 Schumpeter Financial Growth Theory**

Schumpeter theory argued that the services provided by financial intermediaries in mobilizing savings, evaluating projects, managing risk, monitoring managers and facilitating transactions are essential for technological innovations and economic development. Mean while Schumpeter (1934) stressed the role of the banking sector as a financier of productive investments and thus as an accelerator of economic growth. Greenwood and Jovanoic (1990), and Levine (2002), have all constructed theoretical models wherein efficient financial markets improve the quality of investments and enhance economic growth.

### **2.1.2. Endogenous Growth Theory**

The development of endogenous growth theory gave a bigger scope of banking sector and economic growth, it suggest that a strong banking sector promotes economic growth and holds that policy measures can have an impact on the long run growth rate of an economy. Within this models Lucas (1988) enhanced the definition of investment to contain human capital and allow for externalities in investment. Given that they suggested that return on investment are slightly diminishing or even non-diminishing. Following this idea, it is financial institutions, when properly fulfilling their tasks that can generate externalities in investment and by these secure non-diminishing returns to investment in the endogenous growth model. The main implication of this theory therefore, is that banking policies which embraces openness, competition, change and innovation will promote economic growth. The endogenous growth literature underscores the role of finance in promoting long run economic growth and hence, provides a good starting ground for analyzing and understanding the impact of credit on economic performance.

### **2.2 The Concept of SMEs**

Conceptually, the definition of SMEs varies from country to country and even within the same country, it may vary from sector to sector depending on the purpose for which the definition is sort. However, there are some common indexes of the definition such as number of employees, value of assets and turnover etc. For example Egypt considers SMEs as having more than 5 and fewer than 50 employees, Vietnam considers SMEs to have between 10 and 300 employees, World Bank considers SMEs those businesses with maximum employees of 300, \$15 million in annual revenue and \$15 million in assets and the Inter –American development Bank describes SMEs as having a maximum of 100 employees and less than \$3 million in revenue, Dalberg (2011). The CBN of recent puts the employment level of the small scale businesses at less than 50 and medium scale businesses as less than 100. In terms of asset-based, small scale has less than N 1 million while medium scale has less than N150 million (IFC, 2002).

Small and medium scale enterprises have for long been recognized as an instrument of economic growth and development. This growing recognition has led to the commitment of World Bank on SMEs sector as core element in its strategy to foster economic growth, employment and poverty alleviation. In the year 2004 the World Bank has approved roughly \$2.4 billion in support of micro small and medium enterprises (World Bank, 2001, Ayyagari et. al 2007). While the importance of small and medium scale enterprises has not been in doubt, unfortunately classifying businesses into large and medium scale is subjective and premised on different value judgment. Such classification has followed different criteria such as employment, sales or investment for defining small and medium scale enterprises. According to extant literature the definition vary in different economies but the underlying concept is the same. Ayaggari et.al (2003). Buckley (1989) contends that the “definition of small and medium scale enterprises varies according to context, author and countries”. In country such as USA, Britain and Canada small scale business is defined in terms of annual turnover and the number of paid employees. Ihua (2009) points out that in the case of Japan it is conceptualized as type of industry, paid up capital and number of employee. Consequently small and medium scale enterprises are defined as those manufacturing with 100 million yen paid up capital and 300 employees. Those in

wholesale trade with 300million paid up capital with 100 employees while those in retail trade with 100million paid up capital with 50 employees.

In the case of Nigeria hardly do you see a clear-cut definition that distinguishes between small and medium scale enterprises. However, the Central Bank of Nigeria in its monetary policies circular No. 22 of 1988 view small scale industry are those enterprises which has annual turnover not exceeding 500,000 naira.(CBN 1988) Similarly in 1990 the Federal Government of Nigeria defined small scale enterprises for the purpose of commercial bank loans as those enterprises whose annual turnover does not exceed 500,000 thousand naira and for merchant bank loan those enterprises with capital investment not exceeding 2 million naira (excluding the cost of land) or a minimum of 5 million naira.

However, Kozak, (2000) argues that, we cannot explain SMEs other than to say they are companies with metric (usually no of employees or annual turnover that fall bellow certain threshold. It is these indicators, number of employees and or rate of turn over that tend to define the context within which different countries and economies situate their understanding of small and medium scale enterprises. This is to say that, even though SMEs is definable with much or less the same indicator (No of employees, rate of turnover .etc) the indicators are not the same in all countries all the time. In other words while number of employee and rate of turnover are the indicator, the number of employee and total amount of turn over for defining SMEs in different countries are certainly not the same Dalberg (2009). For instance, the employee requirements in Britain is 200, with 2million pound turnover, the same cannot be said of Japan with 100million Japanese yen as paid up capital and 300 paid employees. While in Nigeria, the paid employees are usually not considered important, but more importantly is the turnover of 500,000 especially for the purpose of Commercial and Mortgage bank loans. Balunywa (2010) however affirmed that the number of employee may not be a good indicator, especially where the company is labour intensive. This is true in country like India, where labour intensive is a policy approach to industrialization. However, that is not to say that in some cases, trading organization cannot transact big business, but yet employed few employees. In that case, capital employed may be used as indicator for defining small and medium scale enterprises.

In countries where the number of employees is an indicator, the number of employee required differs from country to another. In Uganda the figure of employees for SMEs are between 5-50., in India it is 30-100, while in the US are less than 500. (Stoner et.al, 1996) In Kenya, 10 or fewer people are called micro business, while 11-50 are referred to small enterprises and 51-100 are called medium enterprises. (Kibera and Kibera, 1997). That is why in the United State of America, small business administration is defined as one that is independently owned and operated, is not dominant in its field and meet up employment or sales standard developed by the agency. (Stoner et.al 1996)This shows the same trend with other countries like Nigeria and Japan except that the exchange value differs in the financial criteria.

In a more general and comprehensive term Ogechukwu (2006) chronicled a general

criteria for defining small and medium scale enterprises in different countries. These includes number of employees, annual turnover, local operations, sales volumes, financial strength, managers and owners autonomy, relatively small markets compared to their industries and capital usually supplied by individual or shareholders etc. There are so many small scale business units in Nigeria which qualifies within this context most of them are in the commercial sector. However a common trend in Nigeria today is the gradual classification of service provider, hotels, fast food and restaurants as small and medium scale enterprises.

As a result of these definitional differences and lack of universal definition, the European Union in 2003 adopted a universally accepted definition of small and medium scale enterprises and micro business as companies with less than 250 employees, with respect to financial criteria, revenues must not exceed 50 million Euro(measure as turn over) or 43million euro(measure as balance sheet) In addition, the European Commission specifies term of ownership stating SMEs must be independent with less than 25% being owned by outside interest.(European Commission; 2009). In a report of enterprises association, Macqueen (2004) conceive of SMEs as enterprises employing 10-99 full time employees or with a fixed capital investment of US\$1000-500,000. Small and medium scale enterprises are certainly not transnational company, multinational cooperation, publicly owned enterprises or large facility of any kind. However, they can depend on business and ownership structure to become a large business unit (Macqueen 2012) while it can be argued that 80% of the financing of SMEs come from owners, friends and families, business form can take different form including private ownership, limited partnership, contract and sub-contracts, cooperatives or associations. (Kozak, 2007) Small and medium scale enterprises have a narrow context within which its operation is carried out. However, where it is effectively operated it has capacity to sprout the economic growth and national development.

#### **2.4 Review of the role of SMEs on Economic Growth**

Small businesses are generally regarded as the driving force of economic growth, wealth creation, and poverty reduction in developing countries. They have been considered as means through which accelerated economic growth and rapid industrialization have been achieved. See (Harris and Gibson, 2006; Sauser 2005; Van et'al, 2002; Kiggudu, 2002, Yusuf, 2000; Monk et'al, 2000; Birch, 1987).

A positive relationship has been documented between small business development and economic growth in developed countries (Harris and Gibson, 2006). However, far less research has been conducted with relationship in developing countries - Studies in small business development in countries - like Nigeria because of the dissimilarities in the process between developed and developing countries (Arinaitwe, 2006).

In the words of Newberry (2006), many researchers concluded that SMEs, being less mobile than large corporations, are more likely to have ties of dependence and familiarity to their communities, which will ensure they protect their reputation and relationships among neighbors and customers by the informal nature of their actions- a phenomenon that is often called "Silent Corporate Social Responsibility" (Medina, 2001). However,

anecdotal and quantifiable evidence exists in a number of studies on small business and environment, providing a sense of how important this sector is for sustainable development in emerging economies.

One study of European SMEs notes that on average, 67.5% of them report practicing some form of external socially responsible activities on a regular basis, such as supporting a local charity (European Commission, 2002). The main reasons cited for these efforts were “improvement of loyalty of customers” and “Better relations with the community” (European Commission, 2002).

According to Newberry (2006), the presence of SMEs also correlates with several economic factors, including the growth of a nation’s Gross Domestic Product (GDP), although evidence for a direct causal relationship remains limited in most cases (Beck et’al, 2005). There are many acknowledging benefits of SMEs in growing an economy (as in Levine, 2005). For example, one of the major investment firms ordered case studies of ten (10) businesses in it SMEs portfolio and found significant benefits for employees, the community and the local economy. Recent bodies of research including a report produced by the United Nations Industrial Development Organization (UNIDO), support these findings, showing that there are widespread consumer’s viewpoints that, SMEs:

- Are labour- intensive, providing more opportunities for low-skilled workers;
- Are correlated with lower income distribution inequality.
- Are important part of the supply chain for large MNCs (Luetkenhorst, 2004);
- Are necessary for Agriculture dependent nations transitioning to an industrial-and service-oriented economy;
- Are excellent “better sites” for innovation and sustainable initiative due to their inherent flexibility and nor-taking ability (Reynard, 2002), and
- Provide all these crucial benefits in developing countries despite their relatively smaller presence (Sunderland, 2005).

According to Dalberg (2009), the benefits of SMEs to any economy are easily noticeable, they include; contributing to the economy in terms of output of goods and services; creation of jobs at relatively low capital cost, especially in the fast growing service sector; provide a vehicle for reducing income disparities; develop a pool of skilled and semi-skilled workers as a basis for the future industrial expansion; improve forward and backward linkages between economically, socially and geographically diverse sectors of the economy; provide opportunities for developing and adapting appropriate technological approaches: offer an excellent breeding ground for entrepreneurial and managerial talent, the curial shortage of which is often a greater handicap to economic development, among others.

According to the Turkish IDB Report (2008), the importance of SME’s within the industrialization period is understood again since 1970’s; their contribution to development can be summarized as follows:

- SME’s are labor-intensive organizations. Their need for qualified labor force is less than large enterprises.
- They create more jobs than large enterprises per certain unit of capital spending.

- SME's have a multiplier effect on development process where they mostly accelerate it.
- SME's use little foreign sources as their production is mostly based on domestic sources.
- SME's can create new markets and shares.
- Their flexibility and adaptability to changing environment help them to survive if they are financed correctly.
- SME's are successful in understanding customer desires as they establish close relations with each other.
- They suffer less from internal bureaucracy.

According to Ade (2007), SMEs play important roles in any economy and doubly so in developing economy such as Nigeria. SMEs account for 30%-40% of all employment, even in developed economies such as USA and Europe, and in the advance Asian countries "Tiger economies" such as Malaysia, Indonesia, and Thailand, this figure is in the 50%-60% range. In Nigeria, it is believed that, if we compute employment figures, SMEs will account for a good majority of employment in the private sector. He added that, apart from employment, SMEs also play important role because they are the engines of innovation in any economy. Even in developed economies, most innovative companies started up as SMEs before they grew over time into the large companies, which we see and observe today. For example, Hewlett Packard (HP) Company, a fortune 100 company that is the second largest computer company in the world, started in a garage in California as SME founded by two friends, Bill Hewlett and David Packard. (Ade 2007).

Obamuyi (2007), observes that, the small and medium enterprises all over the world play important roles in the process of industrialization and economic growth. (Ogujiuba et'al, 2004), stated, that apart from increasing per capital income and output, SMEs create employment opportunities, enhance regional economic balance through industrial dispersal and generally promote effective resource utilization considered critical to engineering economic development and growth. There are indications in Nigeria that the SMEs account for about 70 per cent of industrial employment (Kibera 1997), and well over 50 per cent of the gross domestic product (Odeyemi, 2003), as cited in Ayopa (2011).

Huang et'al (2011), observes that, despite the fact that in most of the developed countries, large firms invariably contribute a significant proportion of all economic activity, SMEs continues to play a crucial role in terms of the share of total employment. The importance of SMEs to any economy is obvious; in Japan, they account for 99 per cent of the total number of enterprises, whilst in the European Union (EU), over 99 per cent of all enterprises are small or medium sized. A similar situation is also found in Taiwan, where SMEs were still found to be accounting for over 97 per cent of the total number of firms in 2008 (Huang et'al, 2011). Beck *et al.* (2005), find a robust, positive relationship between the relative size of the SME sector and economic growth, even when controlling for other growth determinants. According to Ayyagari *et al.* (2007), in high-income countries formal SMEs contribute to 50 percent of GDP on average.

Furthermore, in many economies majority of the jobs are provided by SMEs. In OECD

countries, for example, SMEs with less than 250 employees employ two-thirds of the formal work force (Beck *et al.*, 2008). Using country-level data, Ayyagari *et al.* estimated that, on average, SMEs account for close to 60 percent of employment in the manufacturing sector. According to SME Performance Review (EC, 2009), between 2002 and 2008, the number of jobs in SMEs increased at an average annual rate of 1.9 percent while the number of jobs in large enterprises increased by only 0.8 percent. In absolute numbers, 9.4 million jobs were created in the SME sector in EU-27 between 2002 and 2008. Also, it is often argued that SMEs are more innovative than larger firms. In developed countries, SMEs commonly follow “niche strategies,” using high product quality, flexibility, and responsiveness to customer needs as a means of competing with large-scale mass producers (Hallberg, 2000). Using quarterly time series data from 1992-2009 and applying ordinary least square, the findings suggest that loan to small scale entrepreneurs have a positive impact on the economic performance of Nigeria while interest rate has a negative impact on economic growth (Onakoya, Fasanya and Abdulrahman 2013). More also, Oreoluwa (2011) using a Spearman Rho correlation test finds a significant positive relationship between SMEs financing and economic growth in Nigeria via investment level.

Qureshi (2012), using a survey undertaken from a sample of 500 respondents of SMEs in Pakistan and applying structured questionnaire finds that formal financing is the biggest problem of SMEs as large portion of SMEs does not have the security required for collateral.

The notion of SMEs and entrepreneurship development was introduced into the growth and development landscape as early as the late 1940's with the introduction of targeted policies (grants, subsidized credits, special tax treatment, etc.) and the establishment of small business or SMEs support agencies by governments (e.g. publicly funded SME agencies were set up in 1948 in Japan, 1953 in USA, 1954 in India, 1966 in Tanzania, and 1976 in Turkey).

Despite a long history of development efforts, SMEs, including the informal sector, were perceived rather as a synthetic construction mainly of “social and political” importance, especially throughout the 1980's and up to late 1990's. Although domestic SMEs and the informal sector constituted most of what could be and what are still deemed as “the” private business activity in most developing countries, private sector development strategies advocated for and implemented in these countries were skewed towards the needs of large-scale business, including foreign invested ones. This type of policy advice was partly motivated by the rather disappointing results achieved through extensive SMEs support systems operated in developed countries since the 1970's (Stamer *et al.* 2000).

Recent empirical studies show that SMEs contribute to over 55% of GDP and over 65% of total employment in high-income countries and also show the relative importance of SMEs and the informal sector (shadow economy) are inversely associated with economic development (Ayyagari *et al.* 2003). In low-income countries, especially in the least developed economies, the contribution of SMEs to employment and GDP is less than that of the informal sector, where the great majority of the poorest of the poor make a subsistence level of living. Therefore, an important policy priority in developing countries is to reform the policies that divide the informal and formal sectors, so as to enable the poor

to participate in markets and to engage in higher value added business activities (Ayyagaji et al, 2003).

According to Organization for Economic Cooperation and Development (OECD, 2004) in middle-income countries, formal SMEs contribute about 20% more to employment and GDP than the informal enterprises. Thus, in these countries, eliminating factors that discourage informal enterprises from entering the formal SME sector would also bring about gains in economic terms. This is evidenced by the fact that SMEs contribute over 3 times as much as the informal sector in both total employment (65%) and GDP (55%) in high-income countries, and that these countries are also taking initiative to bring as many informal enterprises as possible into the formal sector.

SMEs are an important source of export revenues in some developing economies. An interesting observation is that SMEs contribute a larger share of manufactured exports in more industrialized East Asian economies, for example 56% in Chinese Taipei, more than 40% in China, India 31.5% than the less industrialized African economies, and 1% in Tanzania and Malawi. (OECD 2004). These observations show that policies for the promotion of SMEs export potential and SMEs exports must be targeted (OECD 2004). SMEs contribute to employment and income generation and export revenues.

According to (Oreoluwa, 2011) as cited in Oluba (2009) posited that there are about 8.4million SMES operating in Nigeria with - enterprises comprise 80 per cent of the total number (about 1.3 million), small business constituting 15 percent (around 420,000) (Oluba, 2009). In terms of SMEs contribution to national output in Nigeria. It has been reported that the SMEs, by revenue, contribute about 75 per cent all entrepreneurial activities that make up Nigeria's gross domestic output, 21 per cent within the -enterprises while 4% belong to the large complex organizations. It is also scored high in entrepreneurial dominance because of its potential in pooling skilled and semi-skilled workers.

### **3.0 Methodology**

Data used for this study was obtained from CBN Statistical Bulletin. The study made use of quarterly time series data in the analysis, and includes data on credit to SMEs, credit to other private sector, Interest rate, inflation and economic growth. In determining the influence of credit to SMEs, credit to other private sector, interest rate and inflation on Economic growth, Cointegration tests and Granger causality test are used in estimating the parameters of the model. Inflation rate: Inflation represents the general price level of goods and services in the country. It is normally calculated as a change in consumer price index at a particular period of time all over consumer price index at a particular period of time multiply by one hundred (100). Nominal GDP: is used as proxy to economic growth which covers the entire economic activities of a nation. It is often measured as the total value of goods and services produced within a given period of time without the effect of inflation. Expenditure method is usually used in calculating or measuring the entire economic activities in the country. The formula is given as:  $GDP = C + G + I + (X - M)$ . Where *GDP* represents gross domestic product, *C* represent consumption by households, *G* represents government expenditures, *I* represent investment expenditures, *X* represent export, *M* is import. Nominal GDP is used as to proxy Economic growth. Interest rate: This variable represents the cost of borrowing and hence measures the cost of investment. Maximum lending rate is used to proxy interest rate and is measured in naira million

terms. Credit to Small and Medium Enterprises (CSMEs): This is total credit extended to the small and medium enterprises (SMEs) in the economy. SMEs are critical to the development of any economy as they possess great potentials for employment generation and contribute to the economic growth and development. Credit to Other Private Sector (COPS): This is total credit extended to the small and medium enterprises (SMEs) in the economy minus the total loans and advances extended to private sector of the domestic economy over a given period that is CSMEs – CPS = COPS. Eviews version 7.0 is used in carrying out the analysis. Recognizing the fact that most macroeconomic time series data are non stationary, and a regression of a non stationary time series data on another non stationary time series may cause spurious regression or nonsense regression. The analysis is preceded by first undertaking Augmented Dickey Fuller unit root test (ADF), and Philip perron unit root test, Autocorrelation and granger causality test were carried out to ascertain that valid models were applied.

The Model specification has to do with the derivation of Mathematical and Econometric model that would be used as the basis for estimation, and used to measure the economic relationship existing between economic variables. The mathematical model is specified as follows:

$$Y = F(X_1, X_2, X_3, X_4, \dots)$$

From the above functional relationship, where Y stands for dependent variable, and X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub> stand for independent variables, therefore the following multiple regression equation can be gotten as:

$$Y_t = \beta_0 + \beta_1 CSME + \beta_2 COPS + \beta_3 INTR + \beta_4 INF + U_t \dots \dots \dots (3.1).$$

Where Y= Nominal GDP, β<sub>0</sub>= Estimated intercept term (constant), β<sub>1</sub>=parameter estimate of the corresponding variable X<sub>1</sub>= Credit to SMEs (CSMEs), X<sub>2</sub>= Credit to other private sector (COPS), X<sub>3</sub>= Interest rate (INTR), X<sub>4</sub>= Inflation (IF), t=Time series data, U=Estimate of the stochastic error term. All the variables used in the analyses were converted into logarithm form.

**3.1 Data Analysis and Results Interpretation**

**3.1.1 Descriptive Analysis**

This section presents descriptive statistics by providing insights into the basic features of the data of certain variables of interest. Under this subsection, summary statistics of the variables were calculated, and unit root tests conducted and discussed under this subsection.

**3.1.1.2 Summary Statistics**

The summary statistics of the variables used for the estimation as obtained from Eviews version 7.0 is reported in Table 3.1. The result indicates that there are one hundred and thirty two observations per variable. The minimum observation in the series is -0.650516, while the maximum observation is 7.061909, with the Kurtosis of 1.623, 1.834, 2.065, 5.411, and 3.087, for Nominal GDP, CSME, COPS, IF and INTR respectively. It shows that the series is not normally distributed and hence the data is asymmetrical. The skewness of -0.195 for NGDP, 0.415 for LSME, -0.319 for LCOPS, -0.832 for LIF, and -0.752 for LINTR, Show that all the variables are negatively skewed with the exception of LSME with skewness of 0.415. The non normality of the distribution is used for the

estimation of (LGDP, LSME, LCOP, LIF, and LINTR) Further supported by a fairly large standard deviation of 1.010, 0.317, 1.278, 0.431, and 0.139 for LGDP, LSME, LCOP, LLIF, and LINTR respectively.

**Table 3.1 Summary Statistics of the Data used for the Estimation**

	LGDP	LSME	LCOP	LIF	LINTR
<b>Mean</b>	5.627954	4.327164	5.246005	1.151825	1.292811
<b>Median</b>	5.836095	4.218299	5.438383	1.137024	1.320665
<b>Maximum</b>	7.061909	5.039760	7.009682	1.952157	1.591027
<b>Minimum</b>	4.050839	3.707570	2.019116	-0.650516	0.903090
<b>Std. Dev.</b>	1.010719	0.317191	1.278991	0.431586	0.139904
<b>Skewness</b>	-0.195082	0.415377	-0.319151	-0.832492	-0.752040
<b>Kurtosis</b>	1.623151	1.834027	2.065049	5.411742	3.087841
<b>Jarque-Bera</b>	11.26368	11.27306	7.048591	47.23768	12.48483
<b>Probabilit y</b>	0.003582	0.003565	0.029473	0.000000	0.001945
<b>Sum</b>	742.8900	571.1856	692.4727	152.0409	170.6510
<b>Sum Sq. Dev.</b>	133.8234	13.17990	214.2922	24.40091	2.564085
<b>Observati ons</b>	132	132	132	132	132

*Source: Authors Computation Using Eviews Version 7.0*

The study utilized Augmented Dickey Fuller (ADF) based on Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC), and Phillips- Perron (PP) tests to examine the presence of a unit root in the series. Most Macroeconomic time series data are non stationary, since carrying out regression on non stationary time series data will lead to spurious or nonsense regression outcomes hence the justification for using unit root test. The result of the unit root test reported in Table 3.2 indicates that all the variables are integrated of order one i.e I (1) and significant at either 1%, 5% or 10%. The data does not contain I (2) series hence support the use of Cointegration.

**Table 3.2: Unit root test**

Variables	Augmented Dickey-Fuller				Phillips Perron	
	AIC		SBC		Level	First Diff.
	Level	First Diff.	Level	First Diff.		
<b>LCOP</b>	-1.853838	-4.494310	-0.661426	-11.97961*	-0.588476	-12.83447*
<b>LSME</b>	-1.506969	-11.12648*	-1.730523	-16.98131*	-1.949963	-18.93847*
<b>LGDP</b>	-1.050319	-4.388863*	-1.050319	-4.388863*	-0.690737	-12.69132*
<b>LIF</b>	-4.776472*	-7.834273*	-3.857092*	-11.14596*	-3.969612*	-3.969612*
<b>LINTR</b>	-2.663253	-9.947145*	-2.284410	-9.947145*	-2.337511	-9.918485*

*Source: Authors Computation using Eviews Version 7.0*

*Note: \* indicates significance at 1%; \*\* indicates significance at 5%; \*\*\* indicates significance at 10%*

#### 4.0 Inferential Results and Discussion of Findings

The analysis of inferential results involves the estimated equations and the diagnostic test, including the optimal lag order selection criteria, the Cointegration and Error Correction models as well as stability tests of the cumulative sum of recursive residual were analyzed, followed by Granger causality test. Diagnostic tests, including the AR polynomial graph, Auto correlation, and Heteroskedasticity were conducted and finally detail evaluation of the Relationship between Credit to small and medium scale enterprises and credit to other private sector on economic growth is carried out.

##### 4.1 Optimal Lag Order Selection Criteria

The maximum lag for the model was selected based on 5 different information criteria. It is evident from the Table that except for LR which agreed at lag 3 all the remaining agrees at lag 2. Hence the study adopted 2 lags as the maximum for the model.

**Table: 4.1 Statistics for Selection Lag Order of the Model**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-110.0938	NA	4.16e-06	1.798341	1.909749	1.843607
1	648.4611	1445.995	4.38e-11*	-9.663454*	-8.995010*	-9.391862*
2	664.9577	30.15792	5.01e-11	-9.530589	-8.305108	-9.032670
3	687.5652	39.56301*	5.22e-11	-9.493206	-7.710687	-8.768959
4	700.1331	21.01200	6.39e-11	-9.298954	-6.959398	-8.348381

\* indicates lag order selected by the criterion

LR: sequential modLIFied LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

**Source: Authors Computation using**

**Eviews version 7.0**

#### 4.2 Cointegration test

It is important to test for Cointegration to see whether there is a long run equilibrium relationship among the variables of interest using Johansen technique. Table 4.2 reports the result of the Johansen likelihood. Both the Trace statistics and Max Eigen value statistics show that there are at most 3 Cointegrating equations.

**Table 4.2: Johansen Cointegration test**

Hypothesized	Trace	0.05	
No. of Eigenvalu	Statistic	Critical	Prob.**

CE(s)	e		Value	
None *	0.402057	115.2720	69.81889	0.0000
At most 1 *	0.162074	49.96103	47.85613	0.0313
At most 2	0.108444	27.50416	29.79707	0.0899
At most 3	0.077201	12.92625	15.49471	0.1175
At most 4	0.021209	2.722572	3.841466	0.0989
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
<b>Source: Authors Computation using Eviews version 7.0</b>				

From the above Cointegration result, the null hypothesis has been rejected. Signifying Cointegrating vectors. This implies that there is a long run relationship among the NGDP, LSME, LCOP, LIF, and LINTR.

#### 4.3 Error Correction Model

Having established that the variables in the model are Cointegrated, a Vector Error Correction model (VECM) with 3 Cointegrating relationships is estimated with lag 2. The result of the Error Correction Model (ECM) as presented in Table 4.3 is negative (i.e. -0.072411) and statistically significant (i.e. -3.99694), indicating that there is a possibility of restoration of equilibrium in case of distortions in the economy following the ECM of -0.072411. It behooves to conclude that about 0.7% of equilibrium can be restored on a quarterly basis. Hence all things being equal, it takes the economy about 14.1 quarters to re stabilize and reestablish equilibrium in case of shocks. In the short run the Coefficients of all the variables were properly signed on line with their prior expectation. Negative and statistically significant coefficient of ECM further strengthens the evidence of Cointegration as obtained in the long run.

**TABLE 4.4: Vector Error Correction Model**

Variables	Coefficient	Standard Error	t. Statistics
<b>C</b>	0.014781	0.07581	0.19497
<b><math>\Delta</math> LGDP(-1)</b>	0.794236	0.09246	8.59010
<b><math>\Delta</math> LGDP(-2)</b>	0.122543	0.08987	1.36357
<b><math>\Delta</math>LSME(-1)</b>	0.044292	0.03442	1.28675
<b><math>\Delta</math> LLIF(-2)</b>	0.010363	0.01614	0.64192
<b><math>\Delta</math> LCOP(-1)</b>	0.031569	0.03983	0.79267
<b><math>\Delta</math> LINTR(-1)</b>	-0.030341	0.11605	-0.26144
<b><math>\Delta</math> LINTR(-2)</b>	0.052496	0.11755	0.44658
<b>ECM (-1)</b>	-0.072411	0.01812	-3.99694
<b>R-squared</b>	<b>0.997915</b>		
<b>Adj. R-squared</b>	<b>0.997740</b>		
<b>Akaike AIC</b>	<b>-3.174590</b>		

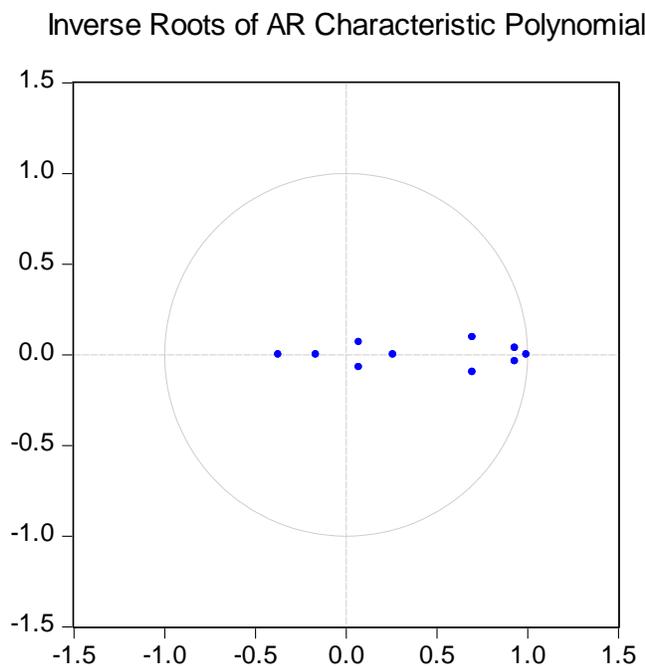
<b>Schwarz SC</b>	<b>-2.931952</b>	
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Source: Authors Computation using Eviews version 7.0.

Also, LM statistics for residual Autocorrelation was carried out using the Langrange Multiplier test and indicates a null hypotheses of no Autocorrelation up to lag 3. Since the validity of the diagnostic statistics requires that the error term follow a normal distribution, the analysis proceed further to test the hypotheses that the error term is normally distributed that is normality test using the Jarque Bera test, Skewness test and Kurtosis test. Hence, all the tests revealed that there is no normality problem.

#### 4.2.2.1.3 Stability Test for the Estimate of the Model

More also, stability test of the estimated parameters were conducted using inverse root of AR characteristics which indicates that the AR Figures lies within the unit circle indicating that the model is well fitted and generally stable as shown in Figure 4.2.



**Figure 4.2: Stability Test**

#### 4.4 Granger Causality Test

In order to analyze the short run causal relationship among the variables in the VECM, a granger causality test was run. The result, as reported in Table 4.7 shows that LSME, LCOP, LIF and LINTR individually and collectively do not granger cause GDP. However, LGDP, LIF, and LINTR do not establish granger causality to LSME. More also for LCOP, LGDP, LIF, LSME and LINTR do not establish granger causality to LCOP. LMR does not granger cause LSME, and LSME does not granger cause LINTR. More also, LCOP does not granger cause LIF, and LIF does not granger cause LCOP. And LINTR does not granger cause LCOP, and LCOP does not granger cause LINTR. Therefore the results as shown in Table 3.6 fail to support any strict causality among the variables despite the lag length of 2. That is to say the variables are exogenous of one another. Thus, credit to SMEs, credit to other private sector, inflation and interest rate are not a specific factors in determining the rate of economic growth in Nigeria.

**Table 4.7: Granger Causality Test**

Null Hypothesis:	Obs	F-Statistic	Prob.
LSME does not Granger Cause LGDP	130	0.84588	0.4316
LGDP does not Granger Cause LSME		0.55827	0.5736
LLIF does not Granger Cause LGDP	130	1.42791	0.2437
LGDP does not Granger Cause LLIF		0.98421	0.3766
LCOP does not Granger Cause LGDP	130	3.42925	0.0355
LGDP does not Granger Cause LCOP		2.05425	0.1325
LMR does not Granger Cause LGDP	130	2.43903	0.0914
LGDP does not Granger Cause LINTR		0.34358	0.7099
LLIF does not Granger Cause LSME	130	0.33222	0.7180
LSME does not Granger Cause LLIF		0.31605	0.7296
LCOP does not Granger Cause LSME	130	0.16942	0.8443
LSME does not Granger Cause LCOP		0.50088	0.6072
LINTR does not Granger Cause LSME	130	1.57754	0.2106
LSME does not Granger Cause LINTR		0.11605	0.8905
LCOP does not Granger Cause LLIF	130	0.33419	0.7166
LLIF does not Granger Cause LCOP		0.51668	0.5978
LMR does not Granger Cause LLIF	130	0.75242	0.4733
LLIF does not Granger Cause LINTR		0.49743	0.6093
LMR does not Granger Cause LCOP	130	1.55733	0.2148
LCOP does not Granger Cause LINTR		0.46221	0.6310

## 5.0 Conclusion and Recommendations

Despite the growing literature on financial development and Economic growth empirical studies that divulge into how credit to SMEs and Credit to other private sector impact on economic growth are scanty. Using Cointegration methods and Granger causality test, the study makes a contribution by investigating and establishing the relationship between credit to SMEs and credit to other private sector on economic growth in Nigeria. In general, there has been a rise in credit to SMEs and private sector in the recent past. More importantly, the empirical result shows a positive impact of credit to SMEs and credit to private sector on economic growth. Findings from this study are consistent with those of Onakoya and Abdulrahman (2013), Eigbiremolen (2013) and Oreoluwa (2011). In

addition, SMEs are statistically significant in explaining economic growth in Nigeria. Credits to SMEs and credit to other private sectors are fundamental in achieving economic growth in Nigeria. The added control variables LIF and LINTR are furthermore statistically significant in explaining economic growth. The findings of the Granger causality test reveals that causality does not exist among Credits to SMEs, Credits to other private sectors, inflation and interest rate on economic growth in Nigeria. In essence, as causality cannot be established, causation between Credits to SMEs, Credits to other private sectors, inflation and prime lending rate on economic growth is weak and insignificant, and as such changes in the level of economic growth cannot be predicted with changes in credits to SMEs and Credits to other private sectors. Based on the findings of this study, the following policy recommendations are proposed; firstly, provision of private sector credit to key economic sectors of the economy should be encouraged. Consequently, policies towards deepening of the financial sector and reducing the cost of credit which is currently considered to be high are important. Such policies should, however, be accompanied with other complementary strategies that will enhance productivity and consequently the growth of key sectors of economy such as manufacturing and Agriculture. Secondly, credit should be made available and accessible to SMEs and Private sectors at a relatively low interest rate. And lastly, Government should encourage policies aimed at financial sector deepening and increasing access to credit is of essence to enhancing economic growth. Such policies should however be complemented with strategies that enhance efficiency of the key sectors of the Economy.

## REFERENCES

- Abu-Bader, S. & Abu-Qarn, A.S. (2008): Financial Development and Economic Growth: The Egyptian Experience. *Journal of Policy Modeling*, 30, 887-898.
- Ade, T.O. (2007): "Small and Medium Enterprises Development and SMIEIS: Effective Implementation Strategy", Mercy Land Finance Co. & Consultancy Ltd, Lagos, Nigeria.
- Arinaitwe, J.K (2006): "Factor Constraining the Growth and Survival of Small Businesses: A Developing Country Analysis", *Journal of AM. Academy of Business Cambridge*. 8(2):167-178
- Ayopa, A.B. (2011): "Effects of Micro financing on Micro and Small Enterprises (MSEs) In South West Nigeria". Covenant University: Ota, Nigeria.
- Ayyagari, M.; Beck, T.& Demirguc-Kunt, A. (2003): "Small and Medium Enterprises Across the Globe", *World Bank Working Paper WPS 2127*.
- Ayyagari, M.; Beck, T. & Demirguc-Kunt, A. (2007): "Small and Medium Enterprises across the Globe", *Small Business Economics* 29, 415-434.
- Balunywa, W.; Namatovu, R.; Kyejjusa, S. & Dawa, S. (2010): *Global Entrepreneurship Monitor (GEM) Executive report Uganda 2010*.
- Beck, T. & Maksimovic, V. (2005): "Financial and Legal Constraints to Firm Growth: Does Firm Size Matters?" *Journal of Finance* 60, 137-177.
- Beck, T.A.; Demirguc-kunt, A.; & Martinez, P. M. (2008): "Bank Finance for SMEs around The World: Drivers, Obstacles, Business Models and Lending Practices", World Bank Policy Research Working Paper 4785. The World Bank, Washington DC.
- Buckley, P.J. (1989): "Foreign Direct Investment by Small and Medium Size Enterprises

- the Theoretical Background". *Small Business Economics* 1: 89-100.
- C.B.N (1998): *Economic and Financial Review*.36 (5): September.
- Dalberg,E. (2011): Report on Support for SMEs In Developing Countries Through Financial Intervention.
- EC, (2009): "European SMEs Under Pressure": Annual Report on EU Small and Medium-Sized Enterprises, Brussels, Belgium.
- Eigbiremolen, G.O. (2013): *Investment Expenditure and Economic Growth in Nigeria*. Germany: Lambert Academic Publishing.
- Greenwood, J.; & Jovanovic, B. (1990): "Financial Development, Growth and the Distribution of Income". *Journal of Political Economy*, **98**, 1076-1107.
- Hallberg, K. (2000): "A Market-Oriented Strategy for Small and Medium-Scale Enterprises," Discussion Paper 40, *International Finance Corporation*.
- Harris, A & Gibson, D. (2006): "Determining the Common Problems of Early Growth of Small Business in Eastern North Carolina", *SAM Advanced Management Journal* 71(2): 39-45.
- Huang, Y.H. & Tsai, M.T.(2011): " A Study of Service Innovation in Small and Medium Enterprises (SMEs): Evidence from E-Commerce Systems". *Research Journal of International Studies*, Vol.18. No4.
- IDB, (2008): *Turkish Islamic Development Bank Annual Report and Accounts*.
- Ihua, B.U. (2009): "SMEs Key Failure factors: A Comparism between the United Kingdom and Nigeria", *Journal of Social Sciences* 18(3), 199-207.
- Kazora, C.; Ousman S.; Porro N.; & Weyerhaeuser, H. (2006): *Working Together: Forest linked Small and Medium Enterprises associations and collective action*. IIED Gatekeeper Series No. 125. IIED, London UK.
- Kibera and Kibera (1997): *Constraints to Small Business: Entrepreneurship and Small Business Growth In Uganda*. Makerere University Kampala.
- Kozak, R. (2000): "Small and Medium Forest Enterprises: Investment of change in a Developing World". *Rights and Resources Initiative, Washington, USA*.
- Levine, R. (2005): *Finance and Growth: Theory and Evidence in Hand Book of Economics Growth*. Eds. Philippe Aghion and Steven Durlauf, Amsterdam: *North Holland Elsevier Publishers, Chapter 12, 865-934*.
- Levine, R. (2002): "Bank-Based or Market-Based Financial Systems: Which is Better?" *Journal of Financial Intermediation*, 11, 398-428.
- Lucas, R. (1988): "On the Mechanics of Economic Development". *Journal of Monetary Economics*, 22, 2-42.
- Macqueen, D. (2004): *Small Scale Enterprises and Sustainable Development Key Issues and policy opportunities to improve impact*. IIED, London: UK .
- Maureen W.; Joseph N, ; & Nelson, R (2012): "Assessing the Impact of Private Sector Credit on Economic Performance: Evidence for Sectoral Panel Data for Kenya". *International Journal of Economics and Finance*, Vol.4 No.3.

- Medina, M.D. & Medina M.R (2001): "Small and Medium Size Enterprises and Sustainability: The case of Canary Islands". Universidad De las Palmas DeGrancanaria: Spain .
- Newberry, D. (2006): "The Role of Small and Medium-sized Enterprises in the Future of Emerging Economies", *World Scientific Publishers, Singapore*.
- Obamuyi , T.M. (2007): "An Exploratory study of Loan Delinquencies among SMEs In Ondo State of Nigeria", *Labour and Management Development Journal*. **8**, 1-10.
- OECD, (2004): "Promoting Entrepreneurship and Innovative SMEs in a Global Economy: Towards a More Responsible and Inclusive Globalisation", *Second OECD Conference of Ministers Responsible for Small and Medium-Sized Enterprises (SMEs), Executive Summary of the Background Papers, Paris, France: OECD*.
- Ogechukwu, A. (2006): *The role of Small Industry In National Development in Nigeria*. Texas United States.
- Ogujiuba, K. K.; Ohuche F. K.; & Adenuga A. O. (2004): "On Credit Availability to Small and Medium Scale Enterprises in Nigeria: Importance of New Capital Base for Banks" – Background and Issues. *A working paper series, USAID-Nigeria*.
- Oluba, M. (2009): "Sanusi Tsunami: Wages of Financial Recklessness". *The Spectator*, August, 21-27, p.15.
- Onakoya, A.B.O.; Fasanya. I.O; & Abdulrahman, H.D. (2013): "Small and Medium Scale Enterprise Financing and Economic Growth in Nigeria". *European Journal of Business and Management*. 5 (4) 130-136.
- Oreoluwa, A.R. (2011): "Small and Medium Scale Enterprises and Economic Growth in Nigeria: An Assessment of Financing Options". *Pakistan Journal of Business and Economic Review* Vol. 2, No.1.
- Qureshi, J. H. (2012): "The Role of Small and Medium Size Enterprise in Socio-Economic Sustainability in Pakistan," *Global Journal of Management and Business Research*, Volume 12, Issue 19, Version 1.0.
- Small and Medium Enterprise Development Authority of Pakistan (SMEDA) (2002): "Creating a conducive Policy Environment for Micro, Small and Medium Sized Enterprises in Pakistan". *SEED Working Paper, Number 29*. Geneva: International Labour Office.
- Soderbom, M. (2000): "Investment in African Manufacturing: A Microeconomic Analysis". *Center for the Study of African Economies, Manor Road, Oxford*.
- Stoner, J.A.F.; Freeman, R.E.; & Gilbert D.R (1996): *Management*. New Delhi: Prentice Hall.
- Sweidan, O. D. (2004): "Does Inflation Harm Economic Growth in Jordan? An Econometric Analysis for the Period 1970-2000". *International Journal of Applied Econometrics and Quantitative Studies*, Vol.1 No.2, pp: 41-66.

Vikesh, G. & Subriana, H. (2004): "Relationship Between Inflation and Economic Growth".  
Working Paper, Reserve Bank of Fiji. Suva Fiji.

World Bank (2001): Review of Small Business Activities. Washington DC. World Bank.