Does Monetary Policy have Impact on the Output of Small Scale Enterprise in Nigeria?

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Abstract

The main objective of this study is to empirically examine the effects of monetary policy on the output of small and medium scale enterprise in Nigeria. The study uses annual data from 1970 to 2012, being a sample period of forty two years. Error correction representation is used to examine the effects of monetary policy on the of output small scale enterprise. The study utilized lag order **2** as the optimal lag length as selected by the information criteria. The key monetary policy variables, are broad money supply, short-term interest rate, exchange rate and domestic credit as against the policy target (output of small scale enterprise). The empirical result indicates that the most important policy variable affecting output of small and medium scale enterprise is exchange rate, it has the most significant negative effect on output of OSME. This is followed by a transitory effect of the broad money supply which has the most significant positive effect on OSME. The negative correlation between the domestic credit and output of small and medium scale enterprise indicates that high lending rates are counter-productive to OSME. This could be attributed to the fact that small and medium scale enterprise do not have access to commercial banks. From the findings the study, recommend that monetary authority should focus in controlling and manipulating instruments such as short-term interest rate, in the form of treasury bill rate, as major tool for transmitting monetary impulses for domestic output in the Nigerian economy.

Keywords: *Output of small scale enterprise, Monetary policy, Interest rate, Money supply, Exchange rate, Domestic credit*

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Background to the Study

Shobhit (2015),Entrepreneurs are frequently thought of as national assets to be cultivated, motivated and remunerated to the greatest possible extent. Entrepreneurs can change the way we live and work. If successful, their innovations may improve our standard of living. In short, in addition to creating wealth from their entrepreneurial ventures, they also create jobs and the conditions for a prosperous society. Path breaking offerings by entrepreneurs, in the form of new goods & services, result in new employment, which can produce a cascading effect or virtuous circle in the economy. The stimulation of related businesses or sectors that support the new venture add to further economic growth.

This paper is a study on the impact of monetary policy on the output of Small and Medium Scale Enterprises on Nigerian economy. It presents an extensive review of the theoretical and empirical literature on Small and Medium Scale Enterprises and monetary policy instruments (interest rate, money supply, exchange rate and domestic credit) in general and in the context of a developing economy such as Nigeria. With the adoption of monetary policy economic reform programme in Nigeria in 1985, there have been several decisions to switch from capital intensive and large scale industrial projects which was based on the philosophy of import development to Small and Medium Scale Enterprises which have better prospects for increasing domestic output, thereby generating the required goods and services that will propel the economy of Nigeria towards development. It is on this basis that James (2014), opine that an entrepreneur should posses the skills of ability to plan, communication skills, marketing skills, interpersonal skills, basic management skills and leadership skills.

Despite the abundant natural resources, the country still finds it very difficult to discover her developmental bearing since independence. Quality and adequate infrastructural provision has remained a night-mare, the real sector among others have witnessed downward performance while unemployment rate is on the increase. Most of the poor and unemployed Nigerians in order to better their lots have resorted to the establishment of their own businesses (Oni and Daniya 2012). Consequently, Entrepreneurship is fast becoming a household name in Nigeria.

The concept of SMEs is relative and dynamic; hence there is no universal definition for small and medium enterprise. However, within the fixed coordinates of national boundaries, it might be relatively easier as each country tends to derive its own definition based on the role SMEs are expected to play in domestic output. Oni and Daniya (2012), note that the abbreviation SMEs occurs commonly in the European Union and in International Organizations such as the World Bank, the United Nations and the World Trade Organization. Also the term Small and Medium Scale Businesses (SMEs) is predominantly used in the United States of America. The European Union states traditionally have their own definition of what constitutes SMEs. For instance, the traditional definition in Germany Limits Small and Medium Scale Enterprises to two hundred and fifty (250) employees while in Belgium, it is limited to one hundred (100) employees.

Following the introduction above, this study is organized into five sections as follows. Section two reviews the literature. Section three focuses on the methodology, the empirical results are analysed in section four. Section five concludes the study with the summary of findings, and recommendations for policy implementation. The paper proceeds to review the literature in the next section.

Theoretical Literature

This section proceeds with a review of the main theory of the study, the financial liberation. This theory is particularly relevant to this paper as it refers to the issue of financial dualism, which is highly relevant to small and medium scale enterprise in the Nigerian economy. Financial reforms of monetary policy and financial institutions under the Structural Adjustment Program me (SAP) was based on financial liberation theory.

The literature of the financial liberation theory started with the seminal work of McKinnon (1973) and Shaw (1973) that initiated the theory of financial liberation and highlighted the adverse effects of financial repression on economic growth. They termed developing economies as "financially repressed". Their central argument is that financial repression causes indiscriminate "distortions of financial prices including interest rates and foreign-exchange rates" ((Sims and Zha 2006)). The proponents of financial reform (McKinnon-Shaw) argue that financial liberalization tends to raise ratios of domestic private savings to income (Shaw 1973). Therefore, financial liberalization will lead to significant economic benefits through a more effective domestic saving mobilization, financial deepening and efficient resource allocation. Interest rate ceilings are imposed to stifle competition in public sector funds raised from the private sector. Measures such as the imposition of foreign exchange controls, interest rate ceilings, high reserve requirements, and the suppression or non-development of private capital markets can all increase the flow of domestic resources to the public sector without higher tax, inflation, or interest rates.

The financial liberalization theory of McKinnon and Shaw (1973) was also based on the premise that the higher the real rate of interest, the greater will be the degree of financial deepening, the more saving there will be, and financial saving will be allocated and invested more efficiently than if saving is invested directly in the sector in which it takes place, without financial intermediation (Sims and Zha 2006). Till the 1960s, the dominant view in the finance and growth literature was the neo-Keynesian perspective, which argued that interest rates should be kept low in order to promote capital formation. During this period, the guiding philosophy of governments in several less developed economies was one of economic planning with directed credit programmes and interest rate controls. These became popular as a means of allocating scarce resources to 'preferred sectors' at low cost. As a further development, the Neo-structuralist critique provides a different observation of the effects of financial liberation than that proposed by McKinnon and Shaw. This critique, which counts scholars such as Van Wijnbergen, Taylor, and Buffie considers the effects of incorporating financial dualism into the original McKinnon-Shaw models, and finds that freeing of interest rates, far from resulting in output growth, may have the opposite effect (Gemech and Struthers, 2003).

Considering the unexpected effects of early liberalization measures, "Neo-structuralist" economists have argued that the reason why higher bank interest rates lead to larger bank deposit is simply that funds are transferred out of alternative asset holdings (Taylor 1983), such as informal credit markets (Van Wijnbergen, 1982). These alternative financing sources, such as informal credit markets, might be a more efficient means of financing investments, since these are unregulated and do not need to keep holdings in reserve as recommended for the banks. The Neo-structuralist therefore posit that raising the interest rates on bank deposits would decrease, rather than increase, the rate of investment in the economy, because the portion of bank deposits that must be kept in reserve does not find its way into investment in the economy.

A key characteristic of the Neo-structuralism critique is the emphasis on informal credit markets as an important source of residual financing. They argue that if this important institutional characteristics of less–developed countries is taken into account, the effects of increasing the bank interest rates, particularly the short run "portfolio-shift" effects, depends critically on the degree of substitutability in household portfolios of bank deposits for loans to the informal market and/or for what are labelled "unproductive" assets. If portfolio substitution leads to an increase in the rate of interest in informal loans, output will fall and, even if allowance is made for the positive effects of higher bank interest rates on savings, medium term growth and the total supply of loans may be reduced (Mishra, Mishra and Mishra 2010). The study proceed to the empirical literature.

Empirical literature
In this regard, Oliveira & Fortunata (2005) investigation, which utilized unbalanced panel data in Portuguese manufacturing (surviving) firms over the period 1990-2001 to estimate a dynamic panel data model of firm growth that include serial correlation and financing constraint using the pooled OLS and GMM-system techniques, reported an overall result which suggests that the growth of Portuguese manufacturing firms is finance constrained.

Akingunola (2011)study, assesses specific financing options available to SMEs in Nigeria and contribution with economic growth via investment level. His methodology adopted The Spearman's Rho correlation test is employed to determine the relationship between SMEs financing and investment level. His result indicated that there is significant positive relationship between SMEs financing and economic growth in Nigeria via investment level.

Wan (2003); Stuti (2005) and Hall (2002). Wan (2003) had equally highlighted the challenges confronting SMEs as lack of financing, low productivity, lack of managerial capabilities, access to management and technology, and heavy regulatory burdens, among many others. Sani et al (2012)evaluate the business condition in Nigeria and its implications for monetary policy. The paper finds that the outlook on business activity contains information about future growth and investment and provides a good measure of inflation expectations, exchange rate expectations, and borrowing rate expectations. The findings that volume of business activity index, financial condition index, average capacity utilization index and access to credit index correlates strongly with the monetary policy rate.

Methodology
Theoretical Framework
One way of understanding how monetary policy affects the economy is through the various channels of monetary transmission mechanism. These transmission mechanisms include interest rate effects, exchange rate effects, asset price effects, and credit channel (Mishkin, 2010). This study therefore adopts the Neo-classical monetary transmission mechanism as the theoretical basis to justify the empirical work. The transmission mechanism theory shows channels through which monetary policy affects aggregate spending and real output [Iyoha (2002), Ajayi (2007)]. Specifically, it refers to the channels through which monetary impulses such as interest rate, credit, real effective exchange rate and real money supply move from the monetary sector to affect real variables in the national economy such as domestic output, consumers price level, employment and balance of payment.

The traditional channels of monetary transmission mechanism are built upon the core models of investment, consumption, and international trade behavior developed during the mid-20th century Mishkin et al (2010):). For investment, the key channels are the direct interest rate channel operating through the user cost of capital. For money supply channel, where money supply represents an expansionary monetary policy by increase in money supply given the demand for money which is sensitive to interest rate will result in a fall in interest rates which in turn reduces the cost of borrowing leading to increase of investment, thereby causing an increase in aggregate demand and an increase in output. Christiano and Eichenbaum (2005) study confirm this theory, their empirical result show that increase in money supply leads to a drop in the interest rate and a rise in domestic output and employment. In addition, effective exchange rates channel of monetary transmission mechanism captures the international effect of domestic monetary policy on net exports through exchange rate (Taylor, 1983).

Model Specification for Functional Equations
Small Scale Enterprise Model

$$OSME = f(MS,DC,EXR) \qquad\qquad 1$$

Where, OSME = Output of small scale enterprise
M2 = Broad money supply.
DC = Domestic credit
EXR= Exchange rate
The above functional form equation **(1)** can be stated in operational form .

$$RGDP = b_0 + b_1 IR + b_2 REXR + b_3 RDCRED + b_4 RM2 + \mu \qquad\qquad 2$$

Transform equation **(2)** in Log-log form. b_0 is the constant factor, b_1, b_2, b_3 and b_4 are the coefficients of RGDP variables before the break.

$$LNRGDP = b_0 + b_1 IR + b_2 LNREXR + b_3 LNRDCRED + b_4 LNRM2 + \mu \qquad\qquad 3$$

Based on economic theory, the expected sign or presumptive sign of the parameter estimates are : $b_1 < 0, b_2 < 0, b_3 > 0, \ b_4 > 0$

Co-integration Test Result
Table 1 reports the co-integration test results for the output on small and medium scale enterprise model . Maximal Eigen value tests indicate 2 co-integrating relationship or vector at the 5% level of significance. To determine co-integrating test, we compare the Maximal Eigen value tests   statistics to the critical value in order to determine the number of co-integrating equations. If the Maximal Eigen value tests statistics is greater than the critical value there is co-integrating equation. For example at rank 1 the Maximal Eigen value tests statistics is 94.1437 greater than the critical value 27.4200 and at rank 2, the Maximal Eigen value tests statistics is 40.1632   greater than the critical value 21.1200. Thus, the Maximal Eigen value tests statistics indicates 2 co-integrating relationship or vector at the 5% level of significance. Thus, the VECM is estimated based on 2 co-integrating vectors.

Table 1: Co-integrating Vector output on Small and Medium Scale Model

Co-integration with unrestricted intercepts and no trends in the VAR				
Co integration LR Test Based on Maximal Eigen value of the Stochastic Matrix				
***				
31 observations from 1982 to 2012. Order of VAR = 2.				
List of variables included in the co-integrating vector:				
OSME	MS	DC	EXR	
List of Eigen values in descending order:				
.95202	.72626	.35004	.027981	
***				
Null Alternative	Statistic	95% Critical Value	90% Critical Value	
r = 0 r = 1	94.1437	27.4200	24.9900	
r<= 1 r = 2	40.1632	21.1200	19.0200	**Conclusion: r= 2**
r<= 2 = 3	13564	14.8800	12.9800	
r<= 3 r = 4	.87977	8.0700	6.5000	

Long Run Estimate for Output on Small and Medium Scale Enterprise Model

The long run result is presented in Table 2. Thus, a unit increase in domestic credit induces a decrease in output on small and medium scale enterprise (OSME) in the long-run up to the tune of -.026378. Domestic credit is negatively related to OSME. This is not in line with the a priori expectation which states that domestic credit is positively related to OSME. Furthermore, a unit increase of money supply induces an increase in OSME in the long run to 053460. This is in line with the a priori expectation which states that money supply is positively related to OSME. The response of money supply to OSME, is based on the economic theory it is statistically significant. The result also show that increase in exchange rate, will lead to a decrease in OSME.

Table 2: Long Run Result for Output on Small and Medium Scale Enterprise Model

Estimated Co-integrated Vectors in Johansen Estimation (Normalized in Brackets)			
Co-integration with unrestricted intercepts and no trends in the VAR			
***			
31 observations from 1982 to 2012. Order of VAR = 2, chosen r =2.			
List of variables included in the co-integrating vector:			
OSME	MS	DC	EXR
	Vector 1	Vector 2	
OSME	.8144E-5	-.1005E-4	
	(-1.0000)	(-1.0000)	
MS	-.1712E-5	.5372E-6	
	(.21020)	(.053460)	
DC	.1444E-5	-.2650E-6	
	(-.17733)	(-.026378)	
EXR	.0054858	.0062739	
	(-673.5917)	(624.4146)	

Short run Dynamics: Vector Error Correction for the Model

The Vector Error Correction (VEC) estimate for the output on small and medium scale enterprise model is shown in Table 3. In the model, Money supply at lag 1 has negative sign, this is not in line with the a priori expectation of this study and economy theory, which says that increase in money supply will lead to increase in the output of small and medium scale enterprise. Besides and the variable money supply is not statistically significant as shown from their p – value. The variable domestic credit is in line with the a priori expectation, it is economically significant with a positive sign, but not statistically significant as shown from the p-value.

The exchange rate variable has a negative sign which, implies that the relationship between exchange rate and small scale enterprise is inversely related meaning that an increase in exchange rate will lead to a decrease in the output of small scale enterprise . This is consistent with the theoretical expectation.

From table 3, the coefficient of determination (R^2) value is .833904, this implies that 83 per cent of the total variation in output on small and medium scale enterprise (OSME) is explained by changes in the explanatory variables. Subsequently, 17 per cent is unexplained due to error term. The adjusted coefficient of determination (R^{-2}) value of .79237 implies that 79 per cent of the total variation in output on small and medium scale enterprise (OSME)is explained by changes in the explanatory variables, when the coefficient of determination is adjusted for degree of freedom. This implies that 21 per cent is unexplained due to error term. The F-Statistic is highly significant at 5% level of significance with the pro-value of .000. Durbin Watson Statistic indicates that there is absence of serial autocorrelation. Thus we can say that the model has a high goodness of fit.

From the regression, the variables that seem to have the most significant short-run relationship with the output on small and medium scale enterprise (OSME) is domestic credit. The goodness-of-fit are robust and highly plausible. The coefficient of error correction term for the model had the right sign and is significant at 1% level. The error correction models produces better short-run forecasts and hence provides the short-run dynamics essential to obtain a long-run equilibrium. Durbin–Watson statistics shows an absence of auto correlation in the model. However, the comments of the short run do not tell us much about the effects of domestic credit, export and money supply on output of small and medium scale enterprise (OSME), because they are only an adjustment mechanism towards equilibrium. The negative sign of the Error Correction Mechanism in the equation suggests that the speed of adjustment between the short-run dynamic and the log-run relationship is satisfactory.

Table 3 Short run Dynamics: Vector Error Correction Model

ECM for variable OSME estimated by OLS based on co-integrating VAR(2)			
Dependent variable is dOSME			
31 observations used for estimation from 1982 to 2012			
***			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
Intercept	-3597.1	2324.4	-1.5475[.135]
dOSME1	.063826	.14704	.43406[.668]
dMS1	-.013654	.015659	-.87195[.392]
dDC1	.0090058	.010470	.86017[.398]
dEXR1	-448.1086	160.1891	-2.7974[.010]
ecm1(-1)	-10002.3	8735.5	-1.1450[.263]
ecm2(-1)	48604.6	8735.5	5.5640[.000]
R-Squared	.83390	R-Bar-Squared	.79237
S.E. of Regression	8735.5	F-stat.	F(6, 24) 20.0812[.000]
Mean of Dependent Variable 13194.4 S.D. of Dependent Variable 9170.9			
Akaike Info. Criterion -328.3498 Schwarz Bayesian Criterion -333687			

Summary and Conclusion

To evaluate the impact of monetary policy on small and medium scale enterprise (OSME),the study used vector error correlation. From the long run result the most import monetary policy variable affecting the output of small and medium scale enterprise is exchange rate, followed by money supply. It was found that the exchange rate has a strong positive correction output of small and medium scale enterprise. The implication is that small and medium scale enterprise directly or indirectly depends on imported raw materials. The negative correlation between the domestic credit and output of small and medium scale enterprise indicates that high lending rates are counter-productive to OSME. This could be attributed to the fact that small and medium scale enterprise do not have access to commercial banks, but rather patronize the informal financial market. This, therefore, suggests that monetary policy actions should be geared towards encouraging the commercial banks to grant loans to the small and medium scale enterprise. Similarly, the broad money supply had a strong correlation with small and medium scale enterprise. This means that high output growth OSME is synonymous with the volume of business activities in the economy. This shows that exchange rate movements affect the level of inflation as well as the lending rates. The stability of the exchange rate would therefore have moderating effect on the output of small and medium scale enterprise in the economy. In this regard, the Central Bank has to adopt appropriate exchange rate Policy to ensure favorable outcomes.

Small and medium scale enterprises are long believed to be instrument of economic growth and development. This has been true in developed economies as experience from United State of America, Britain, Japan, and Germany among others proved that. The same cannot be said of the developing countries, particularly Nigeria where SMEs performance is abysmal. While government efforts both in institutional and policy support were emphasized in this paper. Those institutional and policy support were found not to have been able to addressed the challenges sufficiently. The culpability of SMEs could be attributable to the government and the SMEs entrepreneur themselves. Despite these challenges, there is a new optimism since the enthronement of democracy in1999 in Nigeria. The economic reform process is being pursued

with vigor and on the basis of enhancing Nigeria ailing economy. SMEs sub-sector was seen as critical to Nigeria's economic recovery. No doubt, SMEs. was a salient issue in the economic reform process. As it were, the reform is bearing good fruit and the implication of that for the renew prospect on the improvement and development of SMEs in Nigeria.

Recommendation

To achieve a realistic exchange rate, reduce speculative influences on foreign exchange and ensure the elimination of the tendency towards persistent exchange rate depreciation, bidding for foreign exchange should be within a band of 5 per cent, with the central rate, determined through rational approaches. This system, while not encouraging a fixed exchange rate regime, could eliminate exchange rate speculation, reduce the influence of foreign exchange arbitrageurs in the foreign exchange market, and make planning easier for both users and managers of foreign exchange. It will also reduce the inflationary expectations of exchange flexibility.

There is need for the country's large informal financial market to be integrated into a formal financial sector. This could further deepen financial intermediation to enhance small and medium in Nigeria. Thus, there is the utmost need to fortify the financial sector reform drive by strengthening its regulatory and supervisory functions. Indeed, the Central Bank of Nigeria should improve on the level of liquidity management, such as strengthening further.

This study recommends a measure to stimulate non-oil export, and generous incentive should be offered to encourage local processing of these commodities. Also, the level of output of small ad medium scale enterprise should be raised to provide more tradable commodities in order to raise the level of foreign exchange receipts and cut down on imports.

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