LOAN SYNDICATION AND THE GROWTH OF THE NIGERIA OIL AND GAS SECTOR

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ABSTRACT

This study examines the associate relationship between loan syndication and growth of Nigeria oil and gas industry in between year 1990-2024. The problem of capital and the effectiveness of the syndicated financing on improving sectoral output has been addressed in this study. Specifically, it focuses on the effect of the total value of syndicated loans (VOSL) and the total number of syndicated loans deals (TNSL) on oil and gas sector output (OGSO). The study is anchored on Financial Intermediation Theory, Credit Rationing Theory and Endogenous Growth Theory which generally points to the role of financial institution in mobilising resource, mitigating the constrains of credit and enabling productive investment. Employing ex post facto research design and research philosophy of positivism, the study uses secondary 1/2 time series data, which were collected from the central bank of Nigeria and national bureau of statistics. Data analysis is carried out including descriptive statistics and unit root testing (ADF), co-integration (Johansen) and parsimonious error correction model (ECM) as a way to capture long and short run relations. Findings show that VOSL has a positive but insignificant impact on OGSO while TNSL has a positive and significant impact on OGSO. The long run equilibrium relationship and swift adjustment to deviations is confirmed by the ECM. The study recommends for increasing the number of syndicated loan deals and introducing structured disbursement mechanism to achieve optimal impact with the financial inflows. The results are important in helping explain the role of financial structuring and accessibility in producing output in capital-intensive sectors.

Keywords: Loan syndication, Oil and Gas, Sectoral growth, Intermediation, Banks

1.0 Introduction

Loan syndication, which can be defined as a mode of financing whereby a collection of lenders jointly provide loans to one borrower, is useful in mobilising the amount of capital which would otherwise be considered either too large to risk or too large for a single bank to lend (Olulu-Briggs & Sunday, 2021; Olulu-Briggs & Wobo, 2022; Ofodum, 2025). This type of mechanism has gained an ever-increasing level of importance in emerging markets where financial deepening is limited and alternative capital market instruments are underdeveloped. Syndicated loans enable banks to pool the risk, as they utilize the knowledge of numerous lenders and have generally become a favored option in capital-intensive sectors where the funding commitments are large. The total volume of syndicated loans and the total quantity of syndicated loan deals are popular quantitative measures of syndicated loan market activity representing the scale and intensity of participation in this type of finance (Ofodum, 2025). In Nigeria, syndicated loans are an important source of finance for large-scale corporate and infrastructural investments, especially in industries like oil and gas where the cost of a project is too high and the complex financing needs are well experienced.

The oil and gas industry has long been the mainstay of the Nigerian economy. It contributes substantial proportion of foreign exchange earnings as well as government revenues and so far as industrial contribution. Despite enduring structural challenges, such as changing global oil prices, and the operational constraints, Nigerian banks continue to supply massive credit to Nigerian banks in the sector, as it is evident in the increasing sectoral loan exposures in the last few years (AllAfrica, 2024). These bank credits, usually in the form of syndicated facilities, due to the size of funds required, illustrate not only the strategic importance of the oil and gas industry, but also the dependence of that industry on syndicated finance as a source of funds for its capital requirements.

Empirical studies on the topic suggests the essential role they can play in encouraging economic growth. International evidence indicates that the growth of the syndicated loan markets can have a positive effect on economic growth by increasing external financing sources, diminishing borrowing limits of large firms, and offering investment (Kalloub & Musabeh, 2020). Syndicated loans are especially useful in emerging markets where there are less developed financial markets, such that it opens up possibilities for risk sharing and long-term borrowings that help stimulate productive investment (Kalloub & Musabeh, 2020; Sunday & Wobo, 20245 Godlewski & Weill, 2008). However, there is little empirical work demonstrating the relationship between syndicated loans flows and sectoral output in Nigeria, especially in the oil and gas industry where such financing could have a significant impact on the output and investment dynamics.

Despite a substantial literature on the role of syndicated loans in facilitating the large-scale financing and their broader economic implications, there is low level of empirical research specifically studying the relationship of the metrics of the syndicated loans and the sectoral output in Nigeria, particularly in the oil and gas sector. Most research on syndicated loans based on the Nigerian context are descriptive in nature on issues relating to the processes of syndication, pricing structures, and issues relating to syndicated financing (Ofodum, 2025; Okonkwo & Echekoba, 2022). These studies offer information on the workings and cost of syndicated loans but do not attempt to quantitatively measure the effects of changes in the total value and number of syndicated loan transactions on the levels of output for important sectors of the economy. Furthermore, although international studies have documented the effect of syndicated loan growth on macroeconomic performance in advanced economies (Kalloub & Musabeh, 2020), there is a significant paucity of empirical analysis in Nigeria on a sector-specific basis that bridges the gap between syndicated loan activity and sectoral output at some level of measurability. Existing research on bank credit and sectoral performance tends not to disaggregate credit measures well-known research as opposed to individual contribution. syndicated loan This gap reduces knowledge into how syndicated financing specifically affects the oil and gas sector, which in turn limits the ability for formulating policy focused on evidence-based solution and financial strategies to mitigate and improve sector growth.

2.0 Literature Review

2.1 Conceptual Framework

2.1.2 Loan Syndication

Loan syndication means a type of financing mechanism whereby two or more lenders share one loan with the same borrower under an unbeknownst loan agreement, and it is known to be facilitated by a leading bank or coordinator (Gadanecz, 2004). This financing structure is especially suitable for large scale projects that involve significant capital outlays and come with high risks. Syndicated loans allow lenders to pool credit risk, work within regulatory lending limits, and draw upon its collective expertise on the evaluation and monitoring of projects.

The market for syndicated loans is important for corporate and project funding, particularly in emerging economies where there are limited sources of long-term finance. Syndicated loans are typically taken out for financing infrastructure projects, energy developments and large corporate expansions. Key measurable indicators of loan syndication are the total value of the syndicated loans and the total number of syndicated loan deals. While the total value represents the amount of capital mobilised to the market, the number of deals reflects the intensity and size of the volume of syndicated lending activities in an economy.

In Nigeria, there is an increase in loan syndication because of the capital intensive nature of sectors like oil and gas, telecommunications and power. Nigerian banks often set up syndicates to fund oil and gas projects because they can manage the risk exposure and help in supporting strategic economic activities. Studies have shown that syndicated loans provide a resiliency in financial stability of large firms through risk diversification among multiple institutions and boosts credit for large firms (Godlewski & Weill, 2008). Consequently, loan syndication is a significant medium of support offered by the banking sector to support sectoral and economic growth.

2.1.2 Oil and Gas Output

Oil and Gas Output The total quantity and value of crude oil and natural gas produced in a period of time is called oil and gas output and is usually measured as the contribution of this industry to gross domestic product (GDP) or total industrial output (National Bureau of Statistics [NBS], 2023). In resource-dependent economies like Nigeria, the demand for oil and gas remains one of the key measures of economic performance in view of its vast contribution to export earnings, government revenue and industrial activities.

Nigeria is, of course, one of the biggest producers of crude oil and natural gas in Africa, and the industry has traditionally dominated the country's economic structure. Oil and gas production is driven by many factors, such as investment rates, access to finance, technological expertise, regulatory environment, and global energy prices. Sustained investment is especially important because oil and gas projects are capital-intensive and need sustained investment to keep the production levels and develop new reserves.

Empirical evidence indicates that proper financing is an important contributor to improving oil and gas production levels through the ability of firms to invest in exploration, production infrastructure, and in operational efficiency (Sadorsky, 2010). In Nigeria, bank financing, usually via syndicated loans has been a major source of financing for oil and gas activities. Consequently, oil and gas production is a suitable proxy to gauge the performance and growth of the sector, as it is the consequence of the effects of financial investment, operational capacity and policy environment.

2.2 Theoretical Framework

2.2.1 The Financial Intermediation Theory

The Financial Intermediation Theory establishes a basic reason why financial institutions are involved in mobilising savings and transferring funds to productive investments in an economy. The theory suggests that the existence of the financial intermediaries, especially the banks, is to reduce the transaction cost, information asymmetry, and risk that comes with direct lending from the surplus to the deficit economic units (Gurley and Shaw, 1960; Diamond, 1984). In the context of loan syndication, this theory explains why banks join forces in jointly financing large projects which are too risky or capital-intensive for a single lender. By combining resources and distributing the risks, syndicated loans increase the ability of the banking institution to provide finance for key sectors such as the oil and gas.

In Nigeria where the capital markets are relatively underdeveloped and the instrument of long-term funds are limited, the banking sector are playing a dominant role in achieving financing of the real sector activities. The nature of the oil and gas sector with high capital requirements, longer gestation periods and to volatility of oil prices, optimum financing structures are heavily bank-led. Syndicated loans, therefore, provide an efficient intermediation mechanism for banks to mobilise sizes of money and to reduce the risk of credit concentration. According to Diamond (1984), effective financial intermediation enhances effective resource allocation and spurs productive investment, which eventually means sectoral and economic growth. Anchoring this study on Financial Intermediation Theory gives way to analysing how the rating of syndicated lending performance in terms of the total value and number of syndicated loan deals will promote the growth of output in the oil and gas sector in Nigeria.

2.2.2 Credit Rationing Theory

Credit Rationing Theory that is advanced by Stiglitz and Weiss (1981) is used to understand why financial institutions may restrict the supply of credit even though borrowers can pay interest rates at higher levels. The theory suggests that due to information asymmetry between lenders and borrowers, there is the possibility of adverse

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selection and moral hazard in which the banks avoid provision of credit as opposed to relying only on price mechanisms. In capital-intensive sectors, such as oil and gas, these information problems have been compounded by project complexity, operational risks and exposure to shocks from external parties, such as oil price fluctuations.

Loan syndication offers a practical solution to the problem of credit rationing by enabling several banks to assess the projects collectively, as well as monitor and share information with each other with regard to the borrowers. This kind of collaborative arrangement helps to guarantee reduced informational inefficiencies and helps make it easier for lenders to extend larger credit facilities without taking on too much exposure to risk. In Nigeria's oil and gas sector, syndicated loans have become a financing structure of choice for upstream and midstream projects, in which the need for funding is generally far greater than single-obligor requirements that have been imposed by regulatory authorities. By reducing the constraints of credit rationing, syndicated lending will facilitate access to finance for oil and gas firms, which would aid greater production and industry output.

Empirical researches have suggested that better access to bank credit positively affects the performance of different sectors in developing countries (Beck, Levine, & Loayza, 2000). Applying Credit Rationing Theory to this study allows for a theoretical lens to understand how syndicated loans could relax the constraints associated with financing and also promote output growth in the oil and gas industry in Nigeria.

2.2.3 Endogenous Growth Theory

Endogenous Growth Theory focuses on the importance of internal economic factors -- e.g., investment, financial development and technological progress -- in achieving long-term growth (Romer, 1986; Lucas, 1988). Unlike the exogenous growth models, this theory supports the existence of sustained growth as a consequence of deliberate choices about investments and the presence of efficient financial systems to facilitate the processes of innovation and capital accumulation. In sectoral growth analysis access to long term financing is critical in maintaining investment for productive capacity.

The oil and gas industry in Nigeria needs sustained investment in exploration, drilling technologies, infrastructure, and human capital to sustain and increase oil and gas production. Syndicated loans are an important source of long-term financing to support such investments. Through the lens of Endogenous Growth Theory, it can be observed that syndicated lending is part of sectoral growth through capital formation and by enabling firms to take up new technologies that boost productivity. Financial development, according to the theory, enhances the relationship between finance and output growth by enhancing the efficiency of capital allocation.

Anchoring the study on the theory of endogenous growth makes it possible to cheque the contribution of the activities of syndicated loans to the growth of output from the oil and gas sector in terms of investment expansion and enhancement of productivity. This theoretical framework makes it important to highlight the need for good working financial mechanisms in fostering growth in the strategic oil and gas sector of Nigeria.

2.3 Empirical Review

Meric (2025) analysed the relationship between the distribution of syndicated loans and distribution of sectoral credit in Turkiye using asymmetric causality techniques. The study showed that syndicated loan activities have a significant influence in the sectoral lending patterns, though the magnitude of the impact is different in different sectors. Findings can be that the syndicated loans are an important mechanism to channel funds to capital-intensive industries to boost sector-specific growth where traditional lending might be inadequate.

Focusing on Nigeria, empirical study of the pricing dynamics of syndicated loans using data collected empirically from the commercial banks in Nigeria was carried out by Ofodum (2025). The results of the study indicated that the factors that influence the pricing of these types of loans (syndicated loans) include the risk of the borrower, the size of the loan, the sectoral exposure of the borrower, and macroeconomic conditions. The results further showed that capital-intensive sectors such as oil and gas receive higher syndicated loan volume despite high costs which demonstrated the strategic importance of syndicated financing in maintaining sectoral operations.

Ajagbe and Usman (2025) determined the effect of financial intermediation on economic growth in Nigeria using time series data. The study showed positive and significant long-run link between bank credit to the private sectors and economic growth. Although syndicated loans were not something that occurred in isolation, the findings do support the broader argument for the stimulative effects of expanded credit availability--including syndicated financing--on the growth of the productive sector.

In a research paper about the dynamics of the allocation of credit, Aguirregabiria, Clark and Wang (2024) examined the geographical flow of bank funding and access to credit. Their findings showed that bank funding constraints and spatial imbalances have a significant impact on the access to credit. These results suggest that syndicated lending can be used as an alternative channel of financing to overcome the limitations of regional credit, especially in the economies with unbalanced development in the financial facilities.

Santos and Shao (2022) explored the concepts of investor diversity and liquidity in the secondary syndicated loan market. Using loan-level data, the authors found that as the diversity of the participants in the syndicate increases, the better the liquidity and the lower the transaction costs. This empirical evidence shows the benefits of efficiency of syndicated lending structures and suggests that well-structured syndicates may improve credit availability for large projects.

A study conducted by Boubaker et al. (2022) explained that companies disclosing the results of syndicated loans agreements showed positive abnormal stock returns, especially when the economy was uncertain. This certification effect suggests that the existence of the syndicated loans gives risk signals on part of the borrower's credit-worthiness and financial strength, which can work in the favour of the firm's performance and result of investment.

Musabeh and Kalloub (2020) examined the relationship between syndicated loans and economic growth among G7 countries using the panel regression techniques. Their results showed that there exists a positive and statistically significant relationship between the volume of syndicated loans and economic growth which then suggests that syndicated lending enhances investment capacity and helps to support productive activities. Although the study has been conducted for the advanced economies, there is empirical support for the application of the methodology of the syndicated loan analysis to the study of sectoral growth in the emerging economies.

In the light of Nigerian oil and gas industry, Etim, Umoffong, and Etim (2020) looked at the determinants of financial performance of listed oil and gas companies. The results showed that the access to external financing has a significant effect on a firm's performance. The study implies that the syndicated loans as a major source of large-scale financing can contribute indirectly to improved sectoral output.

Godlewski and Weill (2018) found foreign-currency-denominated syndicated loans in emerging markets have a lower interest spread than those denominated in domestic currency. This finding is especially relevant for oil and gas firms since such financing is foreign based and thus impacts the cost and availability of syndicated credit.

3.0 Methodology

This study adopts ex post facto research design which is suitable for research that utilise historical data and the variables are not subject to manipulation by the researcher. The ex post facto design provides for investigating the causal relationships present between variables using their existing economic and financial records (Kerlinger & Lee, 2000). Given the macroeconomic and sectoral nature of the loan syndication activities and oil and gas sector output which are determined by past economic conditions, policy frameworks, and market dynamics, this design is appropriate for analysing the long run and short-run relationships. The design makes it easy for the study to examine the role that the total value and quantity of syndicated loan incidents play in the development of output in the oil and gas sector in Nigeria over time, covering the period from 1990 to 2024.

The study is anchored on the positivism research philosophy which emphasises on objectivity, empirical observation and the use of quantitative techniques to test hypothesis and establish relationship among the variables (Saunders et al., 2019). Positivism assumes that economic realities can be measured in terms of observable data and that the statistical methods can be used to discover causal relationships. This philosophical approach is consistent with the reliance in the study on secondary time series data and econometric modelling of the association between loan syndication and oil and gas sector growth. By following positivism, the study confirms that conclusions are made as a result of the results of the research and the evidence instead of personal interpretations.

The study uses secondary quantitative time-series data that were collected between 1990 and 2024. Data on loan syndication i.e the total value of syndicated loans and the total number of syndicated loan deals are obtained from internationally recognised financial databases such as Dealogic and reports of Central Bank of Nigeria (CBN). Data on oil and gas sector output are taken from the National Bureau of Statistics (NBS) and the World Bank's World Development Indicators. These data sources are taken to be reliable and are widely utilised in empirical studies in the financial and sectoral analysis. The data is annual in nature and presented in real in the case where necessary in order to maintain consistency and comparability across time.

The study uses a mixed design, descriptive and inferential econometrics methods. Descriptive statistics including mean, standard deviation, minimum and maximum values are used to summarise the characteristics and trends of the variables. This gives us a start on what the indicators of loan syndication and oil and gas output will do with the period of the study.

To prevent spurious regression results that are common in the time series analysis, the unit root test is carried out to analyse the properties of stationarity of the variables. Specifically, the Augmented Dickey-Fuller (ADF) test is used to ascertain the order of integration of every series (Dickey & Fuller, 1981). Variables that are found to be non-stationary at first difference levels but stationary at first difference levels, this level of integration is called I(1) or integrated of order one. Following the unit root test, the Johansen cointegrated test is used to test for the existence of a long-run equilibrium relationship among the variables. The Johansen approach is applicable for multivariate systems and cope with the fact that more than one co-integrating vector can be identified (Johansen, 1988). Evidence of co-integration suggests that there is some relationship between loan syndication and output in the oil and gas industry in the long run despite short-run short-term fluctuations. Finally, to capture both short run dynamics and long run adjustments among the variables am Error Correction Model (ECM) is estimated in a parsimonious manner. The ECM includes the error correction term obtained from the co-integration equation, which is a measure of the speed of correction of the deviations from the long run equilibrium (Engle & Granger, 1987). The use of parsimonious form helps to achieve efficiency as it includes only variables that are statistically significant, which allows for a more reliable and interpretable model.

The model used in this study is stated below:

$$OGSO = f(VNSL, TNSL) \quad 3.1$$

$$OGSO_t = \beta_0 + \beta_1 VNSL_t + \beta_2 TNSL_t \quad 3.2$$

$$OGSO_t = \beta_0 + \beta_1 VNSL_t + \beta_2 TNSL_t + \mu_t \quad 3.3$$

$\beta_1 > 0$ and $\beta_2 > 0$

Where, OGSO = Oil and gas sector output, VNSL = Total value of syndicated loans, TNSL = Total number of syndicated loans, β_o = Intercept, β_1 and β_2 = Constant parameters, μ_t = Error term.

4.0 Results and Discussion

4.1 Results

Table 4.1: Descriptive Statistics Result

	OGSO	VOSL	TNSL
Mean	5000.970	3728.234	32358.53
Median	4044.969	399.2270	10133.10
Maximum	13423.87	16808.64	97391.80
Minimum	44.33132	18.81213	171.0925
Std. Dev.	4751.866	5166.530	36189.80
Skewness	0.454656	1.168243	0.579899
Kurtosis	1.623888	2.996154	1.592502
Jarque-Bera	3.967441	7.961313	4.850679
Probability	0.137556	0.018673	0.088448

Source: E-view Output 10

The average value of OGSO is 5,000.97 and the median is 4,044.97, which would suggest that the output of oil and gas has generally been above average levels but with some significant fluctuations. The high range between the minimum value (44.33) and maximum value (13,423.87) indicates periods of severe contraction and expansion in sector output and likely oil price volatility, oil production disruptions and policy changes. The standard deviation of 4,751.87 further confirms the high volatility of the sector that is characteristic of resource dependent economies like Nigeria.

For loan syndication indicators, we see a mean comprised of 3,728.23 and med is 399.23, meaning that although there are large syndicated loan values in the sample, the bulk of the sample also appears around the lower end of the values. This disparity indicates the existence of some major syndicated loan deals and supremacy of a few loan deals in the outcome of the total loan value and this is typical in capital intensive areas such as oil and gas. Similarly, TNSL has high mean value of 32,358.53 and a median value of 10,133.10, implying that there is a significant variance in syndicated loan activities over time. The very large standard deviation of 36,189.80 of TNSL highlights the rather lopsided distribution of syndicated loan deals which may indicate fluctuations in credit conditions, regulatory reforms and investment appetite.

The statistics for skewness and kurtosis are useful for additional information about the distributional characteristics of the variables. OGSO has moderate positive skewness (0.4547) and the following statistical characteristics: Kurtosis value is less than three (1.6239) - it is a quite symmetric and platykurtic distribution. In contrast, VOSL is positively skew (1.1682) with Kurtosis nearly equal to three (2.9962), indicating a right-tailed distribution that is affected by the occasional large syndicated loans. TNSL also has positive skewness (0.5799) and low kurtosis (1.5925), indicating that the distribution is flatter. The Jarque-Bera test results indicate that OGSO and TNSL have normal distribution at 5% significant level whereas VOSL deviates from normality indicating the irregular nature of the syndicated loan values.

Table 4.2: Augmented Dickey Fuller (ADF) Stationarity Test Variables

Variables	**Level Data**			**First differenced data**			**Conclusion**
	ADF Test Statistics	**T-Critical at 5%**	**P-value**	**ADF Test Statistics**	**T-Critical at 5%**	**P-value**	
OGSO	-0.506444	-2.951125	0.8779	-4.199061	-2.954021	0.0024	I(1)
VNSL	-1.623304	-2.951125	0.2456	-3.484293	-2.954021	0.0149	I(1)
TNSL	-0.267795	-2.951125	0.9730	-4.209730	-2.954021	0.0024	I(1)

Source: E-view Output 10

At level form, OGSO, VOSL, and TNSL all have ADF test statistics less negative than their respective 5% critical values, all have high p-values and are therefore non-stationary. This implies that the variables contain unit roots and are influenced by the stochastic trends over the time. Such behaviour is common in variables that are macroeconomic and financial as they change in response to structural changes and long-term economic conditions. However, when the variables are first-differenced, the ADF statistics are found to be more negative than the 5% critical values and associated p-values are below 0.05 for all the variables. This proves that OGSO, VOSL and TNSL are stationary first difference, i.e. integrated of order one, I(1). The common order of integration meets the necessary condition for the co-integration analysis and to use Johansen co-integration technique to study the long-term relationship among the variables.

Table 4.3: Result of Johansen Co-integration Test

Series: OGSO VOSL TNSL

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.556578	38.18381	29.79707	0.0043
At most 1	0.284547	11.34710	15.49471	0.1910
At most 2	0.008971	0.297379	3.841466	0.5855

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.556578	26.83671	21.13162	0.0070
At most 1	0.284547	11.04972	14.26460	0.1517
At most 2	0.008971	0.297379	3.841466	0.5855

Source: E-view Output 10

Under the trace statistic the null statistic of non-cointegration has been rejected at 5% level of significance since trace statistic (38.18) is greater than the critical value 29.80 having probability value 0.0043. Similarly, the maximum eigenvalue statistic confirms one co-integrating equation as the calculated statistic (26.84) is higher than the critical value (21.13) with the calculated probability of 0.0070. These results collectively imply that OGSO, VOSL and TNSL co-evolve in the long-run despite short-run changes. The existence of co-integration suggests that the activity of loan syndication and the output of oil and gas sector is cooling down in long-term relationship. This finding is in line with theoretical expectations that seeing sustained access to large-scale financing, in the form of syndicated loans, to support long-term investment and output expansion in capital-intensive sectors. It however also shows that any short-run deviation from equilibrium would eventually be corrected, which is a key in reinforcing the case for loan syndication as a long-term financing mechanism for oil and gas sector in Nigeria.

Table 4.4: Parsimonious Error Correction Results

Dependent Variable: OGSO

Method: Least Squares

Sample (adjusted): 1991 2024

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VOSL(-1))	0.065647	0.123596	0.531140	0.5992
D(TNSL(-1))	0.111569	0.017688	6.307719	0.0000
ECM(-1)	-0.710729	0.131403	-5.408764	0.0000
C	1212.381	345.7792	3.506228	0.0015

R-squared	0.915468	Mean dependent var	5146.754
Adjusted R-squared	0.907014	S.D. dependent var	4743.215
S.E. of regression	1446.375	Akaike info criterion	17.50164
Sum squared resid	62759999	Schwarz criterion	17.68121
Log likelihood	-293.5279	Hannan-Quinn criter.	17.56288
F-statistic	108.2978	Durbin-Watson stat	1.317968
Prob(F-statistic)	0.000000		

Source: E-view Output 10

The coefficient of the error correction term, ECM(-1) is negative (-0.7107) and is statistically significant at the 1% level. This validates the existence of a valid error correction mechanism and shows that around 71% of short-run disequilibrium in output of oil and gas sector is corrected within one year. The comparatively large speed of adjustment implies that the oil and gas industry is responsive to its loan syndication conditions, bringing the long-run equilibrium back to the economy after short-run shocks. The constant is positive and statistically significant and therefore, suggest presence of autonomous growth in the oil and gas sector independent of variables related to loan syndication. The goodness-of-fit statistics confirm the strength of the model. Now the R-squared value is 0.9155 which means that around 92% of the variations in oil and gas sector's output are explained using the model. The F-stat is significant at the 1% level which confirms the overall explanatory power of the regression. The Durbin-Watson statistic of 1.32 indicates slight positive autocorrelation, far from being an unusual finding for a macroeconomic time-series model but not invalidating the findings.

Regarding short run Coefficients, the lagged change in total value of syndicated loans, D(VOSL(-1)) have positive coefficient (0.0656) though statistically insignificant. This means that monetary value of syndicated loans do not have an immediate effect on oil and gas output in the short run. The insignificance may be attributed to the length of gestation period of oil and gas projects with massive loan values taking time to translate into actual production results.

In contrast, the lagged change in the total number of syndicated loans, which is D(TNSL(-1)), is positive and quite significant with a coefficient of 0.1116. This implies that a rise in the number of syndicated loans deals has a significant short-run positive effect on the output of the oil and gas sector. This result implies that what matters in the short run is not so much the volume of funds, but rather, the frequency and ease of syndicated financing arrangements. An increase in deals could signal wider access to finance, greater credit confidence and greater project initiation in the sector.

4.2 Discussion of Findings

The empirical findings show a positive though statistically insignificant relationship between the total value of the syndicated loans (VOSL) and the oil and gas sector output (OGSO) in Nigeria. While the coefficient of D(VOSL(-1)) in the ECM is positive (0.0656), the p-value (0.5992) exceeds the traditional 5% level of significance, indicating that increased amount of money value of syndicated loans does not immediately increase oil and gas production in the short run. This insignificance could also be a reflection of structural characteristics within the sector with the long gestation period of oil exploration and production projects, regulatory delays and inefficiencies of operation that inhibit the immediate utilisation of large financial inflows (Sadorsky, 2010). Additionally, the concentration of large syndicated loans among a small number of projects may have a limiting effect on their wider impact on sectoral output as smaller firms or projects may not have access to a large share of available funds. However, even though negligible in the short term, the positive coefficient is in line with what the theory predicts as higher financial resources will boost the capacity to invest, and therefore, higher levels of syndicated inflow of loans to finance can have cumulative benefits to oil and gas production in the long term (Beck, Levine, & Loayza, 2000).

In contrast the total number of syndicated loan deals (TNSL) has a positive and statistically significant link to output in the oil and gas sector. The ECM coefficient of D(TNSL(-1)) is found to be 0.1116 with p-value of 0.0000 i.e., increase in frequency of syndicated loan transactions notably affect the growth of the sector during the short run. This finding drives home the fact that it is not so much the value of loans, as it is the accessibility and diversification of financing sources that have a more immediate impact on production outcomes. The more syndicated loan deals are created, the possible effect on project initiation, expansion, and operation is to distribute the capital across several projects and firms, making the entire sector more productive (Godlewski & Weill, 2008). In addition, frequent syndicated loan arrangements could indicate greater lender confidence and credit monitoring, which could lead to reduced information asymmetry and productive investment (Stiglitz & Weiss, 1981). The result also fits with the role of Financial Intermediation Theory which focuses on the role of banks with respect to resource mobilisation and investment facilitated by efficient lending structures (Diamond, 1984). Therefore, encouraging more syndicated loan transactions can be a useful policy tool for achieving sustainable output growth in the capital-intensive oil and gas sector in Nigeria.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study concludes that the loan syndication is key to the growth of the oil and gas sector in Nigeria albeit with peculiar short-run dynamics. While the total value of syndicated loans shows a positive but insignificant effect, the number of syndicated loan deals shows a positive and significant effect on the output of the sector. This thus implies that accessibility, frequency and distribution of financial resources play a bigger role in stimulating activities that are immediate production than the magnitude of financing. The presence of a large error correction term confirms the existence of a long-run equilibrium, and that the sector adjusts efficiently to depart from the financial inflows. All in all, creating a vibrant and accessible syndicated loan market can improve how both the short and long-term oil and gas industry fare.

5.2 Limitations

Despite its good insights, this study has a number of limitations. First, the use of secondary data limits the analysis to officially recorded transactions of syndicated loans, which may exclude the informal or unreported financing arrangements. Second, in this study, the focus is only on macro-level variables, while factors related to firms such as management efficiency, technology adoption and project-specific risks may impact oil and gas production are not considered. Third, the study uses annual data, which may not pick up any short term change in both loan syndication and sector output. Finally, external shocks such as global oil price volatility and policy changes are not explicitly modelled and this may impact on the observed relationships.

5.3 Recommendations

First, the regulatory authorities and the Central Bank of Nigeria need to incentivize the growth in the number of syndicated loan deals, especially in the medium and small scale oil and gas firms. Policy measures could include some risk sharing guarantees, reductions in transaction costs and simplifying approval processes to ensure banks to form more syndicates. Increasing the number of deals will ensure that there is greater access to finance, reducing the risk of credit concentration as well as sectoral inclusivity.

Second, there should be a structured monitoring and phased disbursement mechanism implemented by financial institutions to maximise the effective utilisation of large syndicated loans. By making the disbursements contingent on the project milestones, the banks can limit the build up of idly lying funds and ensure that the loan values are being efficient in transferring into productive investments. This strategy overcomes the insignificance of loan values in the short run suggested in the study so that the capital inflows are effectively able to increase output. Together, these recommendations are aimed at enhancing the frequency and impact of the syndicated loan in order to enhance the performance of the oil and gas industry in Nigeria (Beck et al., 2000; Godlewski & Weill, 2008).

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