

RISK EXPOSURE AND THE PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

SUNDAY ADEKUNLE ADULOJU Ph.D^a, OLAJIDE SOLOMON FADUN Ph.D^b, ADEDEJI VISCKER OSASONA^c

^a Department of Actuarial Science and Insurance, Faculty of Management Sciences, University of Lagos, Akoka, Lagos State, Nigeria.

^b Department of Actuarial Science and Insurance, Faculty of Management Sciences, University of Lagos, Akoka, Lagos State, Nigeria.

^c Insurance and Risk Management Unit, Department of Finance, Faculty of Management Sciences, Ekiti State University, Ado Ekiti, Ekiti State, Nigeria.

Correspondence author:

Adedeji Viscker Osasona, adedeji.osasona@eksu.edu.ng, +2348066648393.

Adedeji Viscker Osasona: <https://orcid.org/0009-0009-4061-975X>

Abstract

Background: The performance of a sample of manufacturing enterprises was measured in terms of return on assets, and this study looked at the impact of exposure to credit risk, liquidity risk, and interest rate exposure. **Objective:** The aim of this study is to examine how risk exposure affects the productivity of manufacturing companies in Nigeria. The specific objectives of this study are to examine the effect of credit risk exposure on return on asset of manufacturing firms, investigate the effect of liquidity risk exposure on return on asset of manufacturing firms and assess the effect of interest risk exposure on return on asset of manufacturing firms in Nigeria

Method: This study employs inferential and descriptive analysis, using metrics like mean, minimum and maximum value, kurtosis, skewness, and Jacque bera for descriptive analysis. Inferential analytic approaches include correlation analysis and panel regression estimation. Panel regression estimation was chosen to determine if heterogeneity affects the influence of risk exposure on performance, a feature not found in previous studies.

Results: Results showed that exposure to credit risk and liquidity risk positively affected return on assets, while interest rate risk exposure had a negative effect. However, credit risk exposure was the only factor significantly affecting the return on assets of the chosen enterprises. The study concluded that manufacturing firms' exposure to risk, particularly credit risk exposure, significantly affects performance.

Conclusion: To improve performance, the study suggested that manufacturing enterprises should be exposed to a certain level of risk related to debtors and creditors.

Keywords: Credit risk, Interest rate; Liquidity risk; Manufacturing Firms; Performance.

1. Introduction

Since no business works without the assumption and possibility of uncertainty, risk exposure is essential for any business organization, in particular manufacturing-based companies, which are a vital part of an expanding economy (Kanga & Achoko, 2016). Risk is the probability of occurrence, deviation in the expected positive outcome or returns from business processes and activities (Ogunlami & Maroof, 2021). The fact that a business organization has been established means the founder or business owner(s) had accepted to take the risk involved in the business establishment and operations, even with the possibility of having occurrence of some risks which are not intended or expected. For any businesses to achieve goals and objectives it must also be involved in activities and processes with greater returns but these activities and processes oftentimes are associated with greater possibility of loss which may occur with any deviation from the right projections for objective maximization (Ayeni & Emeka, 2021). Risk exposure had been given greater attention by scholar, researchers and business organizations across countries of the world, including Nigeria.

Any organization, regardless of size, should consider risk exposure to be crucial since it provides an estimate of the risk involved in carrying out particular tasks, changing policies, or changing how things are done. Every firm is exposed to risk in all dimensions, especially as regards to operations, crediting, financing and liquidity. (Erin et al., 2017) also stated that relationship between a firm and customers, firm and related companies (complementary and competitive ones), the firm and government, the firm and financial supporters are associated with risks. Organization is exposed to risk from every angle of the business activities and must be able to efficiently and effectively determine the level of this risk to ensure their minimal effect on the organization's objective maximization.

There are many factors operating in the world today that could stand as challenges in the way of realizing organizational objectives which are internal and external to the firm. Manufacturing firms need to be more careful and watchful for risk exposure since the tendency for this to be more deepening is very high as the world is becoming more dynamic and unpredictable than the earlier years of human existence and business endeavour (Offiong et al., 2019). The business environment today is featured by constant changes in social, political and economic factors coupled with strong competitions, rapid technological advancement and methodological changes in the value chain. (Ogunlami & Maroof, 2021) added that factors like environmental concerns and complexity, businesses converting tangible assets to intangible assets, the advancement of information and communication technology, intense competition, and new methods of good and service supply, among others, can prevent manufacturing firms from being exposed to various types of risk.

Irrespective of the nature of risk firm considered or exposed to, the challenges from this would be evident in the performance of the firm as one of the organizational objectives to be maximized. Performance as one of the ways of evaluating organizational outcome entails the degree to which the organization is able engaged the available resources to achieve the desired result to the level possible (Kinyua et al., 2015). Given that the consequence of risk exposure can affect the organization, whether in the operating, financial and investing dimension, it implies that risk exposure can be detrimental to the performance of the firm. The likelihood of adverse effects on the company's performance increasing with risk exposure level. Higher performance in a company is linked to its ability to manage and regulate risk exposure, especially in manufacturing (Jayani Rajapathirana & Yan Hui, 2018). Performance is crucial for businesses as it enhances growth and development in the manufacturing sector, as better-performing firms have more financial capacity to fund business progress and expansion. Higher performance benefits shareholders, creditors, workers, and stakeholders by providing access to investment returns, ensuring repayment, guaranteeing wages and salaries, and allowing for better product design, improvement, and timely production to meet customer satisfaction. Overall, higher performance is essential for business success.

Nigerian manufacturing firms seems to have been experiencing a decline in their financial reports, with many reporting net losses for at least three years, and some hardly reporting net profit. This trend is a significant concern for the nation, which could be a key factor in the current growth and development. The perceived low performance of manufacturing firms is attributed to a lack of adequate infrastructural and material resources, an improper economic and political system, inefficiency in decision-making, inadequacy of human resources, and improper identification and management of risk, including economic uncertainties, which negatively affect business outcomes. The objective of this study is to examine the relationship between credit risk, liquidity risk, and interest risk and the productivity of Nigerian manufacturing enterprises, despite the existence of numerous studies on risk and performance. Previous studies have mainly focused on exchange rate risk exposure and credit risk exposure, lacking data from recent years.

The study will inform business owners, financial analysts, investors, and researchers about the impact of risk exposure on performance. It will provide preventive, precautionary, or controlling measures to address risk exposure. The findings will also help financial analysts and investors to understand the importance of risk exposure and the need for due diligence. The study uses public financial reports from manufacturing companies listed on the Nigerian Stock Exchange, focusing on credit risk, liquidity risk, and interest rate risk

2. Literature Review

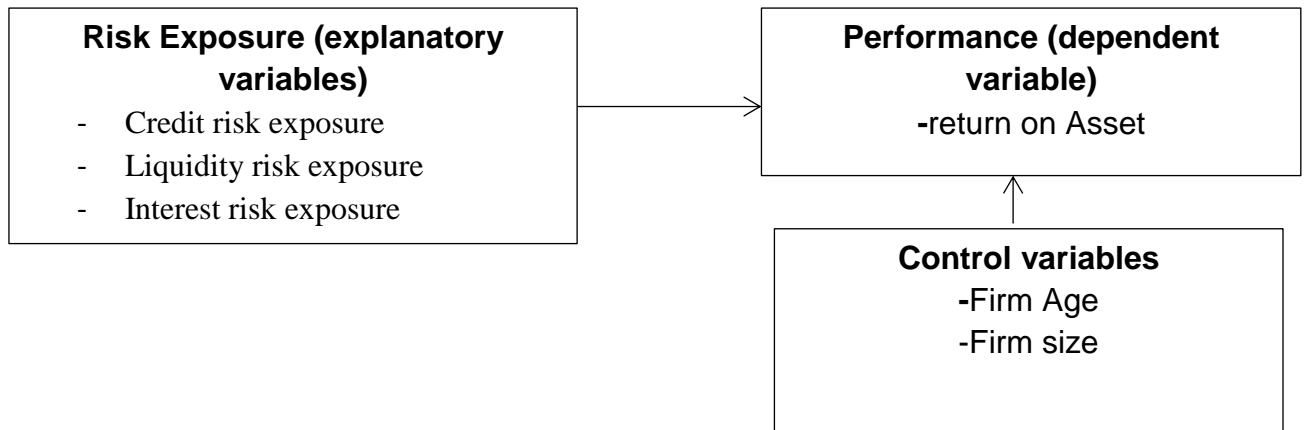


Figure 1: Framework of the effect of risk exposure on performance

Source: Author's Computation (2023)

The likelihood that a negative event will occur can be used to define risk. The uncertainty around impending events and outcomes is also referred to as risk. Risk, according to (Bhimani, 2021), is the statement of the likelihood and consequences of an incident that could have an impact on the accomplishment of an organization's objectives. (Boekestein, 2021) defined risk as a condition in which there is a chance of losing money but also a chance of winning it. According to (Chapman & Ward, 2021), a risk is unquestionably linked to damage or loss. Any business process or activity that is uncertain need not involve risk; nevertheless, if an event is both uncertain and likely to result in loss, then it is likely to involve risk. In a similar vein, (Essinger & Rosen, 2021) noted that risk is the potential for unwelcome, adverse consequences to human life, health, property, or the environment, and that in order for firms to recognize the presence of a risk, they must be aware of both the gains and losses associated with the process under consideration.

Performance is meant to evaluate the effectiveness and efficiency by which financial and physical resources are used to create and achieve values for the organization. For manufacturing firms, performance involves ability of these firms to create output or returns from the collections of inputs engaged in manufacturing processes and all other activities that make the business firm exist (Omweno & Muturi, 2019), Performance measures the degree to which a business is able to achieve predetermined business goals and objectives from the resources engaged in business activities. Performance includes the extent to which a firm is able to generate results from the utilization of man, material, and financial resources in business operations and activities.

'Profit' and 'Performance' are sometimes used interchangeably. There is, in fact, a distinction between the two. Profit is an absolute concept, but financial performance is a concept that is relative. They do, however, play different roles in business and are tightly related and dependent on one another. Profit which is the decisive goal of all business activities (Jamal & Ali, 2014), is the overall revenue generated by the business over the defined time period, whereas financial performance represents the business's operational effectiveness. The business's capacity to turn a profit from sales. According to (Offiong et al., 2019), it is the ability of the enterprise to obtain a suitable return on the resources and personnel used in the commercial operation. Profit and ability are the two terms that make up the concept of a firm's performance. While "profit" refers to the results of a collection of activities that use the resources at hand, "ability" refers to a business's ability to make money or an organization's performance capacity.

Although other studies have taken into account measures like return on investment, gross profit margin, net profit margin, asset turnover, and earning per share, return on asset and return on equity are frequently used to indicate performance (Ayeni & Emeka, 2021; Omweno & Muturi, 2019; Offiong et al., 2019;

Akinleye & Olanipekun, 2021). The return on equity is the measure of the ratio of return earned by the firm relative to the asset of equity owners. Asset of equity owners is the total asset covered by the total equity (Mohammed & Knapkova, 2016; Abbas et al., 2014). On the other hand, the return on asset is the ratio of return earned by the firm relative to the total asset. That is the overall asset of the firm acquired with both equity and debt financing. When a company's financial performance is based on the shareholders' value idea, return on equity is frequently used to measure individual company performance rather than return on asset. The return on asset will be utilized as a proxy for performance in this study since organizations function to satisfy the goals of all stakeholders, including debt-holders and equity-holders.

The theory underlying this study was developed by (Modigliani & Miller, 1958) and later applied to risk management (Klimezak, 2007). They hypothesized that the financial structure of an organization has no bearing on its performance. According to (Modigliani & Miller, 1958) paradigm, shareholders who have access to the same risk management resources as corporate managers don't care how a company manages its risks. Newer views, however, contend that hedging may be a strategy that helps many businesses add value. Hedging reduces cash flow volatility, which has the effect of reducing company performance volatility, according to the main discourse in this area. Fundamentally, the justification for risk was derived from irrelevant factors, such as larger debt capacity, progressive tax rates, a lower estimated cost of bankruptcy, obtaining internal funding, and information asymmetry. According to (George A. et al., 2001), following specific risk management measures may lower the potential loss from exposure to risk and, in particular, lessen the possibility of incurring deadweight costs linked to financial hardship or accessing external capital markets. Therefore, it is asserted that by implementing relevant and proper methods in risk-exposed organizations, one may be able to impact their degree of performance.

Risk management was the subject of (Akinleye & Olanipekun, 2021) investigation on how Nigerian manufacturing companies' financial results are impacted by it. A panel regression estimation technique was utilized to analyse the data in the study, which employed data that was gathered from 10 firms between 2010 and 2019. In contrast to market risk, which had a negative and small impact on the selected enterprises' profit after taxes, the study's findings indicated that liquidity risk had a positive and significant influence on that same measure. The study concluded that adaptable internal control systems should be created by organizations in order to optimize the benefits of internal risk management and to normalize the negative performance effects of external risks like interest rates. The profitability of life insurance businesses in Kenya was evaluated by (Evusa et al., 2021) in relation to market risk and operational risk exposures. 16 licensed life insurance companies in Kenya were the source of the data for the study, which employed panel regression estimation to examine the data over the years 2015 and 2019. According to the study's findings, operational expense risk exposure, interest rate, and foreign exchange risk have a significant and positive impact on the profitability of Kenyan life insurance businesses that are licensed to operate there. Because of this, the report advised regulated life insurance businesses in Kenya to make sure they develop policies for both operational and market risk exposure.

The impact of risk management on the financial performance of Nigerian manufacturing companies was studied by (Banjo & Oloyede, 2021). A sample size of 320 participants was used in this investigation. Using descriptive and inferential statistics, the study was examined. The study's findings showed that risk awareness has a significant influence on manufacturing companies' success, and it advised management in the sector to ensure that risk awareness is efficient and effective because it affects how well manufacturing companies operate.

(Omweno & Muturi, 2019) investigated at how credit risk management techniques affect financial performance. Descriptive statistics were utilized in the study to assess a sample of 86 respondents. The study's findings demonstrated that flexible products improved credit management, and product diversification considered the calibre of clients seeking credit facilities from a variety of products while the borrowed amount was comfortable for the business. As a result, it was advised that product diversification be taken into consideration when assessing the calibre of clients seeking credit facilities.

The effect of enterprise risk management on financial performance in the emerging market was evaluated by (Erin et al., 2017). The study employed data that was collected from 40 companies between the years of 2012 and 2016 and used a pooled regression estimation technique to examine the data. The study's findings

demonstrated a positive and significant relationship between enterprise risk management and financial performance, and they suggested that the financial sector's policymakers take immediate steps to ensure that all companies in the sector adopt ERM.

(Kinyua et al., 2015) examined the effect of risk management on the financial performance of companies quoted in the Nairobi securities exchange. Data from 62 companies listed on the NSE were used in the study, and data were analysed using ANOVA and Chi-square. The study's findings indicated that there was a significant relationship between risk management and financial performance and that the focus should shift from assisting businesses with regulatory compliance and maintaining financial control to assisting them in proactively identifying, assessing, and managing risks. Therefore, the study recommended that firms listed on the Nairobi Securities Exchange have risk management functions suitably integrated throughout all elements of their daily operations in order to achieve constant improvement in their financial performance.

(Parlak & Ilhan, 2016) investigated the effect of foreign exchange risk and financial performance using Turkey as a case study. 30 firms provided the study's data, which was collected between the third quarter of 2012 and the second quarter of 2015 and then subjected to an ANOVA analysis. The study's findings demonstrated that the level of foreign currency risk was adversely correlated with overall profitability and positively correlated with liquidity and asset efficiency.

(Ayeni & Emeka, 2021) investigated how financial risks affected the performance of Nigerian listed manufacturing enterprises. Data were used in the study that were collected from 2010 to 2020, and the data were then analysed using a technique called pooled regression estimation. Leverage risk, liquidity risk, and firm size all had a negative and significant influence on return on assets, according to the study's findings. However, the age of the firm had a positive but small effect. To limit the risk of leverage, the report advised manufacturing enterprises to avoid taking on excessive debt.

(Agura & Oluoch, 2017) assessed the effect of financial risks on market performance of public manufacturing companies in Kenya. This study examined data that was taken from manufacturing companies listed on the Nairobi Securities Exchange between January 2008 and December 2016. The descriptive model was used to examine the study. The study's findings demonstrated that the market performance of Kenyan manufacturing enterprises was significantly impacted negatively by the risks of default rate, credit rate, and currency rate. In their study of the performance of manufacturing organizations, (Ogunlami & Maroof, 2021) looked at the impact of environmental, reputational, and legal risks. In the Ikeja Metropolis of Lagos State, this study examined data from 350 senior employees of ten industrial enterprises. Using a descriptive methodology, the study was examined. As a result of environmental, reputational, and legal risks, the study's findings indicated that manufacturing companies perform poorly. The study therefore suggested that management in manufacturing businesses pay closer attention to their environmental, reputational, and legal risks by ensuring that these risks are appropriately handled with the use of enterprise risk management tools and by providing their entire organization with actionable information.

(Abbas et al., 2014) examined the relationship between Pakistan's banking sector's performance and its exposure to credit risk. The study employed data that was extracted from 21 banks, including state-owned, private, and foreign banks, between the years of 2006 and 2011. The data were analysed using the pooled regression estimation method. The study's findings demonstrated that credit risk, as measured by the ratio of nonperforming loans to total loans and the ratio of loan loss provision to nonperforming loans, has a negative influence on return on asset and return on equity performance metrics. Accordingly, the study also suggested that a bank's performance would improve the more money it advanced to customers.

(Asaolu, 2011) evaluated the vulnerability of some listed Nigerian companies to exchange rate risk. The study included 117 samples of Nigerian publicly traded companies and data that was gathered from the years 1998 to 2007; the data were then analysed using ordinary least square regression. The study's findings demonstrated that the unpredictability of exchange rates presents substantial challenges for the business firms included in this study. Accordingly, the study suggested that monetary and exchange rate management should adopt strategies that focus on achieving long-term stability in exchange rate fluctuations.

(Mohammed & Knapkova, 2016) assessed the effect of comprehensive risk management on business performance. The study made use of data that was taken from 12 companies listed on the Prague Stock Exchange from 2009 to 2014 and used a pooled regression analysis method to examine the data. The study's

findings indicated a strong and favourable association between overall risk management and firm performance. As a result, the study recommended that businesses view risk management not as a defensive instrument but rather as a way to ensure sustainability and progress.

(Asuquo & Tapang, 2012) assessed the performance of Nigerian enterprises as well as their exposure to foreign exchange rate risk. The study made use of data that was taken from 30 sampled Nigerian companies between the years of 2002 and 2011, and descriptive statistics were employed to examine the data. According to the study's findings, the performance of Nigerian listed companies is significantly hampered by exchange rate fluctuation. Therefore, the report advised businesses to determine the type of risk they are exposed to before using tools like matching receipt and payment, Naira invoicing, and others to address it.

3. Method

3.1. Research Design

The longitudinal research design was used in this study to support the empirical work, which involved considering the subject matter in particular manufacturing firms (units) over more than one sampled period.

The Nigeria Stock Exchange's 46 manufacturing companies make up the study's population. Using a purposive sampling technique, a sample of eight manufacturing firms from the list of the quoted companies between 2013 and 2022 was selected. These firms include: Dangote Cement Plc., Guinness Nigeria Plc., NASCON Allied Plc., Nestle Nigeria Plc., Nigeria Breweries Plc., Cadbury Nigeria Plc., PZ CUSSON Nigeria Plc., and VITAFOAM Nigeria Plc. Data from the chosen manufacturing companies published financial reports for the sampling year serves as a secondary source (Kothari, 2009).

3.2. Model Specification

The model used by (Agura & Oluoch, 2017) to analyse the impact of financial risks on the performance of publicly traded manufacturing companies in Kenya was modified for this study. The study employed market return as the dependent variable and selected interest rate risk, credit risk, foreign currency risk, and liquidity risk as proxies for financial risk. The return on asset (ROA), a financial performance measure, is used as the dependent variable in this study's modified version of the model. Credit risk exposure (CRE), interest risk exposure (INTE), and liquidity risk exposure (LRE), which replaces foreign exchange rate risk exposure, are kept as risk exposure proxies, and firm age (FA) and firm size (FS) are added as control variables. As a result, the following is the model for this study:

Functional form of the Model

$$ROA = f(CRE, LRE, INTE, FA, FS)$$

Linear form of the Model

$$ROA_{it} = \delta_0 + \delta_1 CRE_{it} + \delta_2 LRE_{it} + \delta_3 INTE_{it} + \delta_4 FA_{it} + \delta_5 FS_{it} + u$$

Where:

ROA= Return on Asset

CRE=Credit Risk Exposure

LRE= Liquidity Risk Exposure

INTE=Interest Rate Risk Exposure

FA= Firm Age

FS= Firms Size

3.3. Data analysis

This study engages descriptive analysis and inferential techniques of analysis. The descriptive analysis employed is mean, minimum and maximum value, kurtosis, skewness and Jacque bera. The inferential analysis techniques used were correlation analysis and panel regression estimation technique which include fixed effect and random effect estimation. The rationale for choosing panel regression estimation technique is to consider the heterogeneity nature of the firms combined in the study which many of the previous studies had not incorporated so as to ascertain whether the heterogeneity would affect nature of the influence of risk exposure on performance.

4. Results

This section entails presentation, interpretation of results of the empirical analysis of this study. Result specifically is in terms of correlation analysis and panel regression (pooled OLS, Fixed effect estimation and random effect estimation) as depicted in Table 1 and Table 2 respectively. Thereafter, the findings of the study were explicitly discussed towards the end of the section.

4.1. Presentation and Interpretation of Result

Table 1: Correlation Matrix

| | | | | | | |
|------|---------|---------|---------|--------|---------|----|
| | ROA | CRE | LRE | INTE | FA | FZ |
| ROA | 1 | | | | | |
| CRE | 0.4243 | 1 | | | | |
| LRE | 0.3261 | 0.3421 | 1 | | | |
| INTE | 0.0747 | -0.0771 | 0.7472 | 1 | | |
| FA | -0.3495 | -0.3706 | -0.0833 | 0.0631 | 1 | |
| FZ | 0.4069 | 0.7043 | 0.7012 | 0.4324 | -0.1627 | 1 |

Source: Authors' Computation (2023)

The data in Table 1 demonstrates that return on assets is positively correlated with credit risk exposure, liquidity risk exposure, interest rate exposure, and firm size, but negatively correlated with firm age. The correlation coefficients for ROA and CRE, LRE, INTE, FA, and FZ are 0.4243, 0.3261, 0.0747, and -0.3495 respectively. This shows that return on asset moves in the same way with exposure to credit risk, liquidity risk, interest rate exposure, and firm size, but in a different direction when compared to firm age. There may not be multicollinearity among the explanatory factors, according to other correlation coefficients, which likewise showed that there is only a moderate association between the study's pairs of explanatory variables.

Table 2: Panel Estimation Result

| Coefficient | Pooled | Prob | Fixed | Prob | Random | Prob |
|-------------|---|-------|---|-------|---|--------------|
| C | 1.760231 | 0.413 | 10.65681 | 0.000 | 8.659151 | 0.006 |
| CRE | .3459117 | 0.092 | .4642834 | 0.112 | .3787572 | 0.019 |
| LRE | .1832616 | 0.076 | .0832182 | 0.381 | .0622102 | 0.604 |
| INTE | .0770702 | 0.429 | -.0493908 | 0.480 | -.0268195 | 0.702 |
| FA | -.2451888 | 0.638 | -2.746442 | 0.060 | -1.885801 | 0.015 |
| FZ | -.8782556 | 0.349 | -1.120651 | 0.627 | -.8190291 | 0.513 |
| | R-square= 0.3861 F-statistics= 9.31 Prob(F-stat) = 0.0000 | | R-square= 0.8430 F-statistics= 65.50 Prob(F-stat)= 0.0000 | | R-square= 0.5216 Wald-chi2(5)= 12.04 Prob>chi2 = 0.0343 | |
| | Restricted F-test=43.68 (p < 0.05) | | | | | |
| | Hausman Test = 4.27 (p= 0.5114 > 0.05) | | | | | |

NOTE: * connote significance at 5% level of significance.

Source: Authors' Computation, (2023)

Results from Table 2 include estimates of the relationship between compensation and the rate of sales growth for a sample of enterprises using pooled OLS, fixed effect, random, restricted F-test, and Hausman test. The explanation for the study is based on the results of the random effect estimation after the results were evaluated for consistency and efficiency. As shown in Table 2, the coefficient and probability for CRE were 0.3787572 and 0.019 (p 0.05), respectively. This indicated that whenever there is a 1% increase in credit risk exposure, return on asset increases significantly by 0.37%; as a result, credit risk exposure has a significant positive effect on return on asset of the chosen firms. Additionally, the LRE result showed a coefficient and probability of 0.0622102 and 0.604 (p > 0.05) for LRE, which indicated that return on assets increased by 0.06% whenever there was a 1% increase in liquidity risk exposure but that this increase was not statistically significant. Accordingly, liquidity risk exposure has a negligible positive impact on return

on assets of the selected firms. The results also showed a coefficient and probability of -0.0268195 and 0.702 (p 0.05) for INTE, which showed that return on assets decrease by 0.02% whenever there is a 1% increase in interest risk exposure but that this decrease is not statistically significant, and as a result, interest risk exposure has a negligibly small negative impact on return on assets of the chosen firms. When firm heterogeneity is included as an error factor in the model, reported R-square statistics of 0.5216 show that around 52.16% of the systematic variation in return on asset can be explained by credit risk exposure, interest rate exposure, and liquidity exposure along with firm age and firm size.

5. Discussion

The results showed that, when measured in terms of return on asset, higher levels of credit risk exposure favourably impact the performance of specific organizations. This might be the case because manufacturing companies may be able to foster quick production and delivery through credit exposure when creditors are taken into account, which improves income and profit performance relative to the imputed assets, as well as through credit exposure when debtors are taken into account, which may allow manufacturing companies to attract and retain customer base, which is very important for revenues and profits of the firm. According to this, manufacturing companies in Nigeria may perform better if they are exposed to a high level of credit risk. This agrees with research by (Kinyua et al., 2015; Erin et al., 2017) (which contradicted the findings of (Agura & Oluoch, 2017; Abbas et al., 2014), etc. On the other hand, the results indicate that the performance of the chosen manufacturing companies, as measured by return on assets, tends to rise as liquidity risk exposure rises, but there is no proof that the latter is the cause of the rise of the former. The inability of these organizations to direct their exposure to liquidity risk toward any appreciable changes in their level of performance may be the result of the management response to liquidity issues being ineffective. The results also showed that return on asset cannot be explained by interest rate credit risk exposure, despite the fact that the former tends to decrease whenever the latter increases, in line with findings of (Akinleye & Olanipekun, 2021), among others. This contradicts the findings of (Evusa et al., 2021), and others.

6. Conclusions

This study came to the conclusion that risk exposure had a major impact on the performance of manufacturing firms in Nigeria, despite the fact that only credit risk exposure had a significant impact on the return on assets of the chosen manufacturing firms in Nigeria. It is crucial to notice that the management of these companies does not appear to have treated the issue of risk exposure as necessary for improving performance throughout the years. Therefore, this study advised, among other things, that manufacturing companies should put structures and mechanisms in place, such as highly capable management employees, in order to harness exposure issues for better firm performance. Additionally, businesses must make sure that the right amount of credit risk exposure is taken into account from both the perspective of creditors and debtors in order to facilitate performance.

References

- Abbas, A., 'Haider Zaidi, S. A., 'Ahmad, W., & 'Ashraf, R. (2014). Credit Risk Exposure and Performance of Banking Sector of Pakistan. *Journal of Basic and Applied Scientific Research*, 4(3), 240–245.
- Agura, M. B., & Oluoch, O. J. (2017). Effect of financial risks on market performance of public manufacturing companies in Kenya. *International Journal of Social Sciences and Information Technology*, 3(3), 2011–2031.
- Akinleye, G. T., & Olanipekun, C. (2021). Risk Management and Financial Performance of Manufacturing Firms in Nigeria. *Financial Risk And Management Reviews*, 7(1), 67–77.
- Asaolu, T. O. (2011). Exchange Rate Risk Exposure of Nigerian Listed Firms: An Empirical Examination. *International Business Research*, 4(2), 219–225.
- Asuquo, A. I., & Tapang, A. T. (2012). An empirical analysis of foreign exchange rate risk exposure and the performance of Nigerian companies. *International Journal of Current Research Review*, 4(23), 1–8.
- Ayeni, T. Y., & Emeka, H. O. (2021). Financial risk and performance of listed firms in Nigeria. *Journal of Public Administration, Finance and Law*, 22, 156–163.

- Banjo, K. A., & Oloyede, F. A. (2021). Risk management practices and the financial performance of manufacturing firms in Nigeria. *International Journal of Management Studies and Social Sciences Research*, 350–358.
- Bhimani, O. (2021). Risk Management leads to higher corporate legitimacy . *Journal of Management Sciences*, 144(27), 147–157.
- Boekestein, B. (2021). The relation between intellectual capital and intangible assets of pharmaceutical companies . *Journal of Intellectual Capital*, 9(4), 241–253.
- Chapman, C., & Ward, S. (2021). Project Risk Management - Processes, Techniques and Insights. Retrieved from Project-Risk-Management-Processes:Www.Amazon.Co.Uk/Project-Risk-Management-Processes.
- Erin, O., Eriki, E., Arumona, J., & Jacob, A. (2017). Enterprise Risk Management and Financial Performance : Evidence from Emerging Market. *International Journal of Management, Accounting and Economics*, 4(9), 937–952.
- Essinger, J., & Rosen, J. (2021). Using Technology for Risk Management . Retrieved from Technology or Risk Management: Wwww.Jisc.Ac.Uk/Uploaded_documents/Risk_assessment_guidance.Doc.
- Evusa, Z., Matanda, J., & Mugambi, D. (2021). Effect of Market Risk and Operational Risk Exposures on Profitability of Life Insurance Companies in Kenya. *International Journal of Scientific and Research Publications* , 11(11), 510–521.
- George A., Gregory W. B., & Leora F. K. (2001). Exchange rate risk management: evidence from east Asia . *The World Bank Development Research Group, Finance*.
- Jamal, A. M., & Ali, I. A. (2014). The impact of financial risks on the firms' performance . *Europeans Journal of Business and Managements* , 6(5), 97–101.
- Jayani Rajapathirana, R. P., & Yan Hui. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3, 44–55.
- Kanga, S., & Achoko, G. (2016). Liquidity and Financial Performance in Agricultural Firms listed in the Nairobi Securities Exchange in Kenya. *International Journal of Business and Social Science*, 7(7), 57–65.
- Kinyua, J. K., Gekara, M., & Orwa, G. (2015). Effect Of Risk Management On The Financial Performance Of Companies Quoted In The Nairobi Securities Exchange. *International Journal of Business & Law Research*, 3(4), 26–42.
- Klimezak, K. M. (2007). Risk management theory: a comprehensive empirical assessment . *Munich Personal RePEc Archive*.
- Kothari, C. R. (2009). Research Methodology - Methods and Techniques. (2nd Ed.) New Delhi: New Age International (P) Ltd.
- Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *American Economic Association*, 48(3), 261–297.
- Mohammed, H. K., & Knapkova, A. (2016). The impact of total risk management on company's performance. *Procedia, Social and Behavioural Sciences* , 220, 271–277.
- Offiong, A. I., Udoka, C. O., & Basse, J. G. (2019). Financial risk and performance of small and medium enterprises in Nigeria . *Investment Management and Financial Innovations* , 16(4), 110–122.
- Ogunlami, K., & Maroof, A. O. (2021). Effect of environmental risk, reputational risk and legal risk on the performance of manufacturing companies. *Europeans Journal of Accounting, Auditing and Finance Research*, 9(8), 14–25.
- Omwen, J. N., & Muturi, W. (2019). Influence of credit risk management practices on financial performance: a case of small and medium enterprises in Kisii Town Kenya. *International Journal of Scientific and Management Research*, 2(6), 23–37.
- Parlak, D., & Ilhan, H. (2016). Foreign exchange risk and financial performance: the case of Turkey. *International Review of Economics and Management*, 4(2), 1–15.