

# THE INFLUENCE OF RISK MANAGEMENT PRACTICES ON THE PROFITABILITY OF LISTED MANUFACTURING FIRMS MODERATING EFFECT OF FIRM SIZE

***Adenle Oluwatimileyin Esther*<sup>1</sup>, *Abidoye Olayinka Olaitan*<sup>2</sup>,  
*Adeoye Lukmon Adewale*<sup>3</sup>, *Olu-Akinola Fadekemi Ruth*<sup>4</sup>, *Ojeleye David Ayodele*<sup>5</sup>  
& *Onibonokuta Lateef Obasanjo*<sup>6</sup>**

Osun State University, Osogbo, Osun State Nigeria<sup>1,3&5</sup>,  
Bowen University, Iwo, Osun State, Nigeria<sup>2</sup>,  
University of Ilesha, Ilesha, Osun State, Nigeria<sup>4</sup>,  
Osun State College of Technology, Nigeria.<sup>6</sup>

Oluwatimileyin.adenle@uniosun.edu.ng, Olayinka.abidoye@bowen.edu.ng<sup>2</sup>,  
mailwaleadeoye1@gmail.com<sup>3</sup>, fadekemi\_olu-akinola@unilesa.edu.ng<sup>4</sup>,  
ayo.ojeleye@gmail.com<sup>5</sup>, & Onibon.obj@gmail.com<sup>6</sup>

## **Abstract**

This study used purposive sampling techniques to sample 30 firms out of a total population of 44 firms, and it examined the moderating effect of firm size on the relationship between risk management practices (RMPS) and profitability of quoted Nigerian manufacturing firms. Liquidity risk (LIDR) and leverage risk (LEVR) were used as proxies for risk management practices, while return on assets was used as a proxy for profitability. Descriptive statistics and panel regression analysis were the data estimation methods used in this study. According to the study's findings, LIDR and LEVR had a statistically notable adverse correlation with ROA, as evidenced by their respective t-stats. and p-vals. of -2.88, -8.60, and 0.018, 0.000. With t-stats. and p-val. of -2.18, -7.82, and 0.032, 0.000, respectively, the moderating effect of firm size (FRS) on the relationship between RMPS and profitability showed that FRS has an adverse, noteworthy moderating influence on LIDR and LEVR. Therefore, this study concluded that the connection between risk management methods and the profitability of quoted manufacturing firms in Nigeria was adversely moderated by firm size. The study recommends that businesses should implement cost-effective risk management strategies that reduce LEVR, LIDR risk and financial pressure while guaranteeing sufficient risk mitigation. To enable more flexible and efficient decision-making at the operational level, large firms should also decentralize some RMPS functions.

**Keywords:** Liquidity risk, Leverage risk, Risk management disclosures, Return on Assets

**Jel Code:** M4, M14

## **1 Introduction**

Risk management has developed into a crucial strategic instrument for guaranteeing the long-term viability and financial success of businesses. Financial, liquidity, and operational risks, as well as regulatory and market uncertainty, are among the many hazards that organizations face when they operate in increasingly diversified markets, particularly in emerging nations like Nigeria. According to Siregar and Safitri (2019), risk management is an organized procedure designed and carried out by the business to assess and control all risks that could jeopardize its operations. This allows management

to gather and approve these risks at a point where the business can overcome them. Good risk management procedures (RMPs) help businesses to identify and mitigate likely risks, protecting assets, cutting losses, and improving financial performance (Hoyt & Liebenberg, 2011). Chitta and Soni (2023) opined that in the fast-paced world of contemporary business, a firm's profitability and long-term survival are now significantly influenced by its capacity to effectively manage financial risk. According to Ahmed and Manab (2016), businesses with strong risk management (RM) systems are better positioned to increase operational effectiveness, reduce capital costs, and boost profitability. Liquidity risk (LIDR) and leverage risk (LEVR) are two of the most important aspects of corporate risk management since they directly affect a company's ability to operate and its financial stability (Adusei, 2021). Leverage risk (LEVR) indicates the level of financial risk resulting from an over-reliance on debt financing, whereas liquidity risk is the incapacity of a company to fulfil its short-term financial obligations when they become due (Tajudeen et al., 2020). If not properly handled, these types of risk can raise financial distress, decrease profitability, and jeopardize corporate existence.

One of the most important measures of a company's performance is profitability (PROF), which is also essential for economic growth, investor confidence, and business expansion. Profitability is a crucial measure of operational effectiveness that not only establishes a company's viability but also plays a noteworthy role in determining the firm's financial health for creditors, investors, and other stakeholders (Almazari, 2014). A company's ability to reward shareholders, reinvest in its operations, and weather economic downturns is improved when PROF is consistently attained. According to Wahyuni and Oktavia (2020), a company's value rises when its ability to create profits grows because investors have higher expectations for the returns they will receive. According to Ogbo et al. (2022), companies that use better RMP will increase operational effectiveness, reduce capital costs, and boost PROF. A company's profitability level that keeps rising will be a good indication that it can enhance its financial performance chances (Mariani & Suryani, 2018). Businesses with greater profitability are better positioned to get more investors, obtain less expensive financing, and benefit from competitive advantages, according to Aliu and Oladipo (2021). A popular indicator of a company's financial performance in relation to its total assets is return on assets (ROA), which provides insight into how well management is using its assets to produce profits (Noja et al, 2021).

According to Kiprop and Yegon (2017), RM has an impact on a company's financial performance by reducing the problems created by complex business environment and uncertain business environment. Profitability (PROF) is a crucial component of efficient business operations, which has a big impact on bank performance and economic growth, according to Adebayo et al. (2024), who also stated that effective RMP and PROF when combined have an impact on the financial performance of businesses in today's competitive environment. Risk management techniques including enterprise risk management (ERM), internal controls, and financial hedging are complicatedly adopted into corporate governance structures in industrialized countries with strong legal frameworks and developed financial systems (Hoyt & Liebenberg, 2011). As an illustration of the favourable correlation between risk management and profitability, companies in the US and Europe have implemented extensive ERM strategies to lower profits volatility and increase shareholder value. Businesses' ability to manage risk is hindered in developing countries by economic unpredictability, careless regulatory monitoring, and restricted access to financial markets (Ahmed & Manab, 2016). Despite the fact that RM and PROF are still closely related, businesses in these areas frequently struggle with issues like inadequate risk assessment frameworks, a shortage of qualified staff, and insufficient technology. According to research from developing nations like Brazil, South Africa, and India, companies that practise proactive RM continue to outrun their counterparts in profitability level, revealing the universal significance of RM in improving financial performance (Kapil and Kapil, 2020). It is commonly known in the literature that firm size influences risk exposure as well as RM ability. In comparison to their smaller counterparts, larger companies may be able to manage risks more successfully because they have greater resources, diversified activities, and access to better risk management technologies (Wang, 2020).

Small and medium-sized businesses (SMEs), on the other hand, might be more vulnerable since they lack the human and financial resources necessary for thorough risk management. According to Onyali et al. (2021), the degree to which RMP impact PROF may be significantly be moderated by firm size. Due to unpredictable macroeconomic conditions, restricted credit availability, and unstable market condition. Businesses in emerging nations like Nigeria frequently struggle to manage LIQR and LEVR. Firms may be forced to sell assets at unfavourable prices or fail on obligations due to liquidity restrictions, which would have a detrimental impact on PROF (Ezeaku et al., 2022). Similarly, organizations that use excessive leverage are more vulnerable to financial risks and greater interest commitments, which can limit growth prospects and lower earnings (Olalekan & Adeyemi, 2013). Despite these obstacles, research shows that businesses who implement good risk management techniques will have an increase in profitability (Ogbo et al., 2022). Nevertheless, a lot of Nigerian businesses still have trouble putting in place thorough risk management systems, which limits their capacity to maintain profitability in an unstable economic environment.

To protect their PROF some Nigerian businesses have adopted enterprise risk management techniques, but other, SMEs in particular still have difficulty in identifying and reducing risks. This discrepancy begs the question of whether RMP have a consistent impact on PROF across business sizes or if firm size increases or mitigates this effect. Despite these facts, there are still few empirical studies looking at how firm size affects the connection between risk management practices and profitability in Nigeria. Few studies have examined how firm size affects the impact of risk management practices on profitability, despite the fact that it is recognized as a critical factor impacting both risk exposure and management capability. The majority of studies conducted in Nigeria, including those by Agyemang et al. (2020), Nyaga et al. (2021), Mwenda and Ibrahim (2023), Oghenekaro et al. (2023), Oyerogba et al. (2016), Ogbo et al. (2022), Onyali et al. (2021), and Wallace (2018), tend to pay little attention to the moderating role of firm size as a whole. Therefore, the moderating effect of firm size on the relationship between risk management practices and profitability of listed Nigerian manufacturing firms was investigated in this study. It seeks to offer accurate outcome that could be useful to investors, shareholders, researchers, financial analysts, and listed industrial companies.

### **Research Question**

Does firm size have a moderating effect on the relationship between risk management practices and profitability of quoted Nigerian manufacturing firms?

### **Hypothesis**

H<sub>01</sub>: Firm size has no moderating effect on the relationship between risk management practices and profitability of quoted Nigerian manufacturing firms.

## **2 Literature Review**

### **Risk Management Practices (RMP)**

According to Salamia (2021), risk management comprises of all the procedures necessary to identify, assess, and lessen possible risks to a company's resources and financial success. Risks can come from a variety of sources, including natural disasters, legal obligations, strategic management errors, and financial sector unpredictability. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) asserts that enterprise risk management adds value through lowering operational costs, enhancing risk choices, and managing risk level and strategy (COSO, 2017). A company's value is often determined in large part by strategic risk, which is particularly evident if the company's value declines significantly over a short period of time (Igbru, et al., 2023). Financial and liquidity issues are used in this study as a measure for RMP.

Ashraf et al. (2021) opined that financial risk encompasses a variety of risks associated with financial transactions that involve loans from organizations. Leverage risk indicates the level of financial risk

resulting from an over-reliance on debt financing, whereas LIQR is the incapacity of a company to fulfil its short-term financial obligations when they become due (Tajudeen et al., 2020). An independent, highly qualified, experienced, and committed governance board is essential for successful RMP, which also increases asset portfolios as a source of return and lowers operating expenses (Bunea & Vasile, 2020).

### **Profitability (PROF)**

One important measure of a company's financial health and is profitability. According to Mwenda and Ibrahim (2023), profitability may be used as a metric to assess how well a company manages its operations and uses its equity. A number of financial data, including Return on Equity (ROE), Return on Assets (ROA), and Net Profit Margin (NPM), are frequently used to gauge profitability. Out of all these measures of profitability, return on assets (ROA) is commonly considered as a comprehensive metric that evaluates a company's capacity to turn all of its assets into net income (Mwaniki & Omagwa, 2017). According to Riyanto (2001), the higher the Return on Assets (ROA), the better the organisation's profitability level. Yusuf (2020) and Raheman et al. (2019) are some of the studies that have used ROA in their previous studies.

### **Risk Management Practices and Profitability**

A company's profitability can be increased by anticipating possible dangers, minimizing losses, and seizing opportunities with the aid of effective RMP. Profitability is influenced by RMP since it guarantees effective resource allocation in addition to reducing financial losses. The PROF of the company is predicted to benefit from risk management practices. Effective risk management minimizes risks that could jeopardize the firm's value, which aligns the interests of managers and shareholders, according to the agency theory (Jensen & Meckling, 1976). Disclosure about risk management also significantly increased profitability (Supriyadi & Setyorini, 2020).

According to Gatzert and Martin (2015), RMP also increase PROF in European businesses by lowering capital costs and improving decision-making. According to research by Kapil and Kapil (2020) and Uwuigbe et al. (2020), companies that use risk management techniques are better equipped to handle market volatility and maintain profitability. Furthermore, by lowering uncertainty and enhancing operational effectiveness, risk management techniques in Nigerian manufacturing companies have a beneficial impact on financial performance, according to Ogbo et al. (2022). Agyemang et al. (2020), Nyaga et al. (2021), Mokhtar and Mellett (2017), Mwenda and Ibrahim (2023), Oghenekaro et al. (2023), Oyerogba et al. (2016), Ogbo et al. (2022), Onyali et al. (2021), Wallace (2018), and Yusuf (2020) are few of the researchers who have examined the impact of RMP on financial performance in their past studies.

### **Moderating role of firm size on the nexus between risk management disclosures and profitability**

Risk management procedures (RMP) are essential for maintaining profitability and protecting organizational assets. However, a number of variables, including business size, may affect how effective these strategies are and how they affect profitability. The relationship between risk management and profitability is thought to be moderated by firm size, which is frequently considered a factor of a company's ability to absorb risks, access resources, and execute effective risk management systems (Onyali et al., 2021). Also, larger corporations are thought to have more formalized and structured RM systems than smaller companies. Because when ownership and control are separated, larger organizations have more agency issues, which calls for stronger RM procedures to safeguard shareholder interests, according to Agency Theory (Jensen & Meckling, 1976).

Furthermore, larger businesses can employ sophisticated risk assessment and mitigation techniques since they have greater access to human and financial capital resources (Gordon et al., 2009). Hoyt and Liebenberg (2011) discovered that since they could distribute risk across a larger range of operations, large businesses using Enterprise Risk Management (ERM) had greater financial gains than smaller



businesses. Additionally, larger companies are in a better position to utilize RM techniques that, by lowering operational, financial, and market risks, which will in turn increase profitability. However, large organizations gained more from the adoption of ERM than their smaller counterparts, Kapil and Kapil (2020) showed that FRS increases the favourable impact of RM on profitability.

According to Ogbo et al. (2022), large enterprises benefited more from RM methods in terms of profitability because of their greater capability to absorb risk and availability of resources. This implies that the beneficial effects of RM on financial performance are improved by the moderating effect of firm size. According to Manab et al. (2016), many SMEs in developing nations lack the resources and technical know-how necessary to set up efficient risk management systems that lower the risk affecting profitability.

### **Firm Age**

An organization's firm age is the number of years it has been in business since its inception (Olagunju et al., 2023, Adenle et al., 2025). Performance may be improved by older companies' perceived greater operating experience, established market presence, and steady business. Younger businesses frequently have greater failure rates because of inadequate risk management systems, lack of resources, and lack of market expertise. According to Munyoro et al. (2020), firm's age tends to positively affect its profitability.

### **Theoretical Framework**

When Berle and Means (1932) investigated the corporate revolution in the early 1930s, this hypothesis was developed. Jensen and Meckling helped to further popularize it in (1976). The relationship between an organisation's principals, or owners and shareholders, and its agents, or managers, is explained by this idea. It asserts that conflicts occur when managers, who are in charge of managing the company, put their own interests ahead of maximizing shareholder profit. This disagreement frequently results in risky behaviors that could hurt the company's bottom line. According to the agency hypothesis, the majority of firms function in an environment of uncertainty and insufficient information. Businesses are vulnerable to two agency issues under such circumstances: moral hazard and adverse selection (Kiprop & Yegon, 2017).

By encouraging openness, improving decision-making, and protecting the company's assets, effective RMP lowers agency costs and boosts profitability. Since its introduction as an explanation model for corporate reporting, agency theory has gained popularity as a justification for risk management disclosure.

According to agency theory, reporting on risk management helps to lessen information asymmetry and stakeholder conflicts between management and shareholders. Because ownership and control are separated, large enterprises are subject to greater managerial discretion, which calls for stronger governance and RMP mechanisms. Larger organizations are better able to reduce agency expenses than smaller ones because they have the capacity to create comprehensive risk management frameworks (Kapil & Kapil, 2020).

### **Empirical Review**

The connection between RMPS disclosures and the financial performance (FNP) of a few Nigerian quoted banks was examined by Oghenekaro et al. in 2023. RMPS disclosures were measured using financial, operational, strategic, and technological risk disclosures. On the other hand, financial performance was measured using ROE. The time frame for the study is 2015–2022. Panel least squares regression is one of the data estimation methods employed in the study analysis. The study's findings showed that there is a favourable, noteworthy connection between FNP and all of the RMPS disclosures proxies.

In their research, Mwenda and Ibrahim (2023) examined how RMPS affected the profitability of Tanzanian companies quoted on the Dares Salaam Stock Exchange between 2010 and 2021. PROF was measured using ROE and ROA. The quantitative approach was used in the study to incorporate

secondary data. The results of the investigation, which used panel regression, showed that RMPS has a noteworthy impact PROF.

Nyaga et al. (2021) studied how some dairy cooperative societies in Meru, Kenya, performed in relation to risk management strategies (RMPS). The study used a descriptive research design to collect responses from 72 respondents. Data was gathered through the use of questionnaires. The results of the test of the collected data showed that RMPS has a notable impact on the cooperative societies' financial performance.

Agyemang et al. (2020) investigated the connection between the RMPS and FNP of particular unions involved in credit issuance in Kumasi. Purposive sampling methods were used to contact 100 respondents for this investigation. The data collection instruments included both primary and secondary data. The study's discoveries showed that RMP have a noteworthy influence on ROE and ROA.

Wallace (2018) also reviewed how RMP disclosures affected the PROF of 47 Nigerian companies that were listed. The chosen companies are those that were listed on the Nigeria Exchange Group website in 2016. Data collected for this investigation were analyzed using OLS. PROF was measured using ROE. The results showed that companies with more RMP disclosures outperformed those with lower RMPS disclosures.

The disclosure of RMPS in UK companies' financial accounts was examined by Iatridis (2018). The data collected for this investigation was analyzed using a regression model. The study's findings showed that companies with greater PROF, growth, size, and leverage metrics are those that disclose RMPS. Oyerogba et al. (2016) examined the relationship between some selected enterprises' RMPS and FNP in Nigeria during a period of time spanning from 2005 to 2014. In this study, 21 banks were sampled. In this study, both primary and secondary data were used. The study's findings showed that RMPS has a notable impact on FNP.

### 3 METHODOLOGY

The casual research design adopted in this study was used due to the utilization of panel data. The study covered a ten-year period, ranging from 2014 to 2023. Using purposive sample approaches, thirty (30) companies were specifically chosen from a total of forty-four companies in four manufacturing sectors: consumer goods, agricultural, industrial goods, and conglomerate sectors. The study's data came from the Nigeria Exchange Group's (NGX) website and the annual reports of the carefully selected manufacturing companies quoted. Random effect regression analysis and other descriptive and diagnostic tests were used to examine the data that was gathered.

**Table 1: Measurement of Variables**

Variables	Label	Measurement	Source
<b>Dependent</b>			
Profitability (Return on Asset)	ROA	<i>Firm Net Income/ Total Average Asset</i>	<i>Olagunju et al., (2022).</i>
<b>Independent (Risk Management Practices) RMPS</b>			
Liquidity Risk	LIDR	Current Asset/ Current Liabilities	Adeyemi et al. (2022)
Leverage Risk	LEVR	Total Debt/ Total Asset x 100%	Adebayo et al. (2024)
<b>Moderating Variable</b>			
Firm Size	FRS	expressed as the natural log of total assets	Adenle et al. (2022), Olagunju et al., (2024) Adenle et al. (2025)
<b>Control Variable</b>			
Firm Age	FGE	Measured by the no. of years since the incorporation of the firm.	Adenle et al. (2023), Olowookere et al. (2023).

*Researcher's Compilation (2025)*

### Model specification

The model used for this study is stated below:

#### PROF MODEL

$$ROA_{it} = F(LIDR, LEVR, LIDR * FRS, LEVR * FZS, FGE, \dots \dots \dots 1$$

$$ROA_{it} = \beta_0 + \beta_1 LIDR_{it} + \beta_2 LEVR + \beta_3 LIDR * FRS_{it} + \beta_4 LEVR * FRS_{it} + \beta_5 FGE_{it} + \mu_{it} \dots \dots \dots 2$$

Where;

ROA= Return on Assets, LIDR = Liquidity Risk, LEVR= Leverage Risk, FRS = Firm Size, FGE = Firm Age

$\beta_0$  = Constant parameter,  $\beta_1 - \beta_5$  = Regression coefficient of Independent and control variables,

i = Number of sampled firms, t = Number of years,  $\mu_{it}$  = Error terms

## 4 Results

**Table 2: Descriptive Statistics**

	ROA	LIDR	LIDR*FRS	LEVR*FRS	LEVR	FRS	FGE
<b>Mean</b>	0.865	1.301	9.441	4.792	0.657	7.4155	48.533
<b>Median</b>	0.171	1.000	7.410	4.541	0.597	7.479	51.000
<b>Maximum</b>	13.049	17.829	138.707	19.452	3.338	9.519	92.000
<b>Minimum</b>	-0.600	-0.182	-1.623	0.345	0.049	0.904	9.000
<b>Std. Dev.</b>	2.099	1.429	10.327	2.498	0.364	0.978	19.170
<b>Skewness</b>	3.831	6.729	7.504	1.977	2.537	-0.930	-0.208
<b>Kurtosis</b>	18.590	69.927	87.204	9.699	14.639	8.277	2.391
<b>Jarque-Bera</b>	3772.057	58255.34	91445.16	756.690	2015.391	391.337	6.782
<b>Probability</b>	0.000	0.000	0.0000	0.000	0.000	0.000	0.033
<b>Sum</b>	259.52	390.351	2832.164	1437.648	197.071	2224.651	14560.00
<b>Sum Sq. Dev.</b>	1317.526	610.532	31889.12	1865.773	39.652	286.211	109884.7
<b>Observations</b>	300	300	300	300	300	300	300

Source: Authors' Computation (2025)

The results from the descriptive statistics indicate that the ROA has an average value of 0.865, a median of 0.171, a max. of 13.049, and a min. of -0.600. As regards the independent variables, LIDR, LEVR exhibited mean, median, maxi., and min. values and standard deviation values of (1.301, 1.000, 17.829, -0.182, 1.429) and (0.657, 0.597, 3.338, 0.049, 0.364) respectively. The moderating effect of FRS on RMPS on profitability revealed that LIDR\*FRS has a mean, median, maxi., and min. values and standard deviation values of (9.441, 7.410, 138.707, -1.623, 10.327). Whereas LEVR\*FRS has exhibited a mean median, maxi., and min. values and standard deviation values of (4.792, 4.541, 19.452, 0.345, 2.498). The control variables FRS and FGE have a mean, median, max., min. and standard deviation values of (7.4155, 7.497, 9.519, 0.904, 0.978) and (48.533, 51.000, 92.000, 9.000, 19.170) respectively. With the exception of FRS and FGE, all study variables showed beneficial skewness, indicating right-skewed distributions. Additionally, the kurtosis analysis revealed that all of the measures had kurtosis values larger than three, with the exception of FGE, which had a value below three. None of the metrics had a platykurtic dispersal. All of the variables have Jarque-Bera (JB) statistics larger than 5%, indicating that they are **normally distributed**

## Correlation Analysis

**Table 3: Correlation and test of Multi-collinearity**

	ROA	LIDR	LEVR	FRS*LIDR	FRS*LEVR	FRS	FGE	VIF	1/ VIF
<b>ROA</b>	1.000								
<b>LIDR</b>	0.0861	1.000						1.09	0.9042
<b>LEVR</b>	0.1052	-0.2731	1.000					1.11	0.9081
<b>LIQR_FRS</b>	0.0787	0.9716	-0.3220	1.000				1.20	0.9087
<b>LEVR_FRS</b>	0.0965	-0.3595	0.9275	-0.3361	1.0000			1.26	0.9089
<b>FRS</b>	0.0422	-0.149	-0.1552	-0.0370	0.1424	1.000		1.10	0.9157
<b>FGE</b>	0.0065	-0.139	0.0744	-0.0567	0.0902	0.1306	1.000	1.03	0.9716

Source: Authors' Computation (2025)

The correlation analysis table's results revealed a positive relationship between ROA and LIDR, as indicated by a coefficient of 0.0861. Also, LEVR exhibited a very weak negative correlation of 0.1052 with ROA. LIQR\*FRS has a revealed positive correlation with ROA evidenced with coeff. of 0.0787 whereas LEVR\*FRS exhibited a correlation of 0.0965 with ROA. Furthermore, FRS showed a positive correlation of 0.0422 on ROA whereas FGE depicted a positive weak connection with ROA (0.0065). The table's VIF values, which span 1.03 to 1.26 attested to the absence of multi-collinearity among the factors that were being studied.

**Table 4: Regression Diagnostic and Specification Test Results (ROA)**

Test	P-val.	Comments
F-test	0.000	Pooled OLS is not recommended over panel regression.
Breusch pagan Heteroscedasticity test (30.21)	0.000	There is no heteroscedasticity
Hausman Test (11.3245)	0.0640	Random Effect is most Preferred

Source: Authors' Computation (2025)

The regression diagnostic test table revealed that F-test is significant at 0.5% with p-value of 0.000, which signifies that pooled OLS is not appropriate for this study. The Breusch pagan test of heteroscedasticity revealed that there is no heteroscedasticity problem among the study variables evidenced with p-value of 0.000. The Hausman test result revealed that random effect is preferred to fixed effect. This is evidenced by p-value of 0.0640. Therefore, this study adopts random effect regression analysis as the method of data analysis.

## Random Effect Analysis Result

**Hypothesis:** Firm size have no noteworthy moderating effect on the relationship between risk management practices and the profitability of quoted Nigeria manufacturing firms.

**Table 5: Random Effect Analysis Results**

Variables	Coeff.	Std. Error	T-stat.	Prob.
C	-13.522	1.7816	-7.59	0.000
LIDR	- 0.1439	0.0499	- 2.88	0.018
LEVR	-8.922	1.0369	- 8.60	0.000
LIDR*FRS	-0.2156	0.1001	-2.15	0.032
LEVR*FRS	-1.162	0.1485	-7.82	0.000
FRS	1.743	0.2287	7.62	0.000



FGE	0.023	0.0137	1.74	0.082
R <sup>2</sup>	0.51			
F-Stat.	32.49			
Prob>F	0.000			
Wald Test (35.44)	0.000			

*Source: Authors' Computation (2025)*

The analysis of the impact of risk management practices (RMPS) on the profitability of listed Nigerian manufacturing enterprises was presented in a table 5. Table 4's Hausman test result of 0.0640 indicated that the random effect was appropriate for the data analysis. The profitability of the selected Nigerian manufacturing firms is noteworthy impacted by risk management practices, as indicated by the F-stat of 32.49 with a prob. of 0.000. About 51% of the variation in ROA can be described by the explanatory variables, with the error term explaining the 49% that cannot be explained. The explanatory variables are collectively significant in explaining the differences in the result variable based on the Wald Test outcome. The results of this study also revealed that, according to the t-statistics and p-values of (-2.88, -8.60) and (0.018, 0.000), respectively, LIDR and LEVR had a negative and statistically noteworthy association with ROA. This implied that a higher level of liquidity risk would lead to a lower ROA. Also, increased LEVR will also lead to decreased profitability. Excessive leverage can increase the firm's financial risk by making it more vulnerable to changes in interest rates or the economy, which could undermine investor confidence and lower share price. With t-statistic and p-val. of (-2.18, -7.82) and (0.032, 0.000), respectively, the moderating effect of firm size on the relationship between RMPS and profitability showed that FRS has a negative, noteworthy moderating influence on LIDR and LEVR. Thus, the findings showed that while the alternative hypothesis that firm size has a noteworthy moderating influence on the link between RMP and profitability was accepted, the null hypothesis was rejected. FRS, the control variable, has a notable influence on ROA, but FGE had no notable effect on ROA, as shown by t-statistic and p-values of 7.62, 1.74, and 0.000, 0.082.

### Discussion of Findings

The liquidity risk, leverage risk, and return on assets of listed Nigerian manufacturing firms are the main focus of the findings on the moderating effect of firm size on the relationship between risk management practices (RMPS) and profitability. Due to their capacity to distribute risk across a larger range of operations, large businesses who implemented Enterprise Risk Management (ERM) saw greater financial gains than smaller ones. This study's findings showed that the relationship between the profitability of the selected Nigerian manufacturing companies and their risk management practices proxy with liquidity risk and leverage risk has an adverse noteworthy impact on ROA. This implies that the unfavorable impact of leverage and liquidity risks concerns on PROF becomes more apparent as firm size grows. These results imply that the costs and structural complexity of risk management in larger organizations may exceed potential benefits, resulting in a fall in profitability, even when larger firms are projected to benefit from economics and improved risk management strategies. However, the impact of LIQD and LEVR risk can be reduced with the aid of effective risk management techniques. This was confirmed by Hoyt and Liebenberg (2011), who claimed that because large organizations using enterprise risk management (ERM) were able to distribute risk over a larger portfolio of operations, they experienced greater financial gains than smaller companies. Because large organizations gained more from the adoption of ERM than their smaller counterparts, Kapil and Kapil (2020) showed that firm size increases the favourable impact of risk management on PROF.

The negative impact of LEVR and LIDR risk on ROA revealed that profitability declines as risks rise, indicating that the companies have an efficient RM procedure in place. Larger companies may incur greater RM expenses, despite their propensity to have an efficient RM plan. Effective RMP may be hampered by bureaucratic bottlenecks in larger companies. Decision-making processes are more complicated as businesses expand, and poor management-level communication can make risk reduction

tactics less effective. Smaller businesses, on the other hand, might have more adaptable and flexible RMP strategies that don't place undue financial strain on them. This is consistent with the agency theory, which holds that as businesses grow, more administrative oversight and control systems could result in inefficiencies that have a detrimental effect on PROF. This study's findings are consistent with agency theory, which holds that because ownership and control are separated in larger enterprises, there are more agency issues and hazards, which raises LIDR and LEVR risk (Jensen & Meckling, 1976). Wallace's (2018) study also discovered a negative impact on the relationship between RMPS and PROF. In contrast, research by Igbru et al. (2023), Mwenda and Ibrahim (2023), Nyaga et al. (2021), and Agyemang et al. (2020) indicated that RMP had a positive, noteworthy impact on PROF.

## 5 Conclusion and Recommendations

The moderating impact of firm size on the association between risk management procedures and the market value of Nigerian listed manufacturing companies was thoroughly examined in this study. The results of this study showed that the association between RMP and profitability is negatively moderated by firm size. In summary, the study concluded that the relationship between risk management strategies and the profitability of listed Nigerian manufacturing companies is significantly moderated negatively by company size. The implication of this is that larger firms might have more complex and rigid structures, making risk management less flexible or effective. Therefore, their ability to translate improvements in liquidity or leverage management into profitability is reduced compared to smaller firms. Larger firms' managers might also need to integrate risk management into strategic decision making, rather than treating it as an isolated control function. The negative moderation suggests that risk efforts must align with firm wide financial goals to preserve profitability. Based on the conclusion of this study, the study recommends that: businesses should use cost-effective risk management strategies that reduce financial strain, leverage, and liquidity risk while guaranteeing sufficient risk mitigation. To enable more flexible and agile decision-making at the operational level, larger firms should as well decentralize some RMPS functions. This study only focused on how firm size moderated the nexus between RMP and profitability, future researchers can concentrate more on the impact of RMP on the market value of financial firms with firm age as moderating variable.

## References

- Adebayo, A. O., Adenle, O. E., Daramola, P. S. (2024). Risk management practices and market value of quoted manufacturing firms in Nigeria. *Zbornik radova Ekonomskog fakulteta Sveucilista Mostaru*, (30), <https://hrcak.srce.hr/en/clanak/473714> 7
- Adenle, O. E., Ojuade, G. A., Sulaiman, A. A., Ajiboye, O. O., Abidoye, O. O & Ige J. O. (2025). The influence of firm structural, monitoring and performance attributes on financial reporting quality of listed Nigeria consumer goods firms. *Journal of Family Business and Management Studies*, 17 (2), 1-12.
- Adenle, O.E., Adeoye, L. A., Adamu, D. & Mbah, F. I. (2023). Intellectual capital and dividend policy formulation: evidence from Nigeria's non-financial firms. *Nigerian Journal of Management Sciences*, A publication of the Faculty of management sciences, Rivers State university, Port-Harcourt, 1a (24).
- Adenle, O. E., Ojeleye, A.D., Anyanwu, P.O., Olorede, T.E., & Afolabi, F.O. (2022). Influence of managerial stock ownership on debt policy of quoted consumer goods firms in Nigeria. *Scientific-Technical Journal of Moravian Business College Olomouc, Czech Republic*, 14 (2). 44-54. [http://emijournal.cz/?page\\_id=13](http://emijournal.cz/?page_id=13)
- Ahmed, I., & Manab, N. A. (2016). The relationship between enterprise risk management (ERM) practices and firm financial performance: Evidence from Nigerian listed firms. *International Journal of Management Research and Review*, 6 (9), 1232–1242.

- Agyemang, J. K., Kwarteng, C., Kyekyeku, F. O., Mogunde, B. M. (2020). The relationship between risk management practices and financial performance of credit unions in Ghana. *Research Journal of Finance and Accounting*, 11 (20), 49- 63.
- Almazari, A. A. (2014). The relationship between capital structure and company performance in the Saudi cement industry. *American International Journal of Social Science*, 3 (11), 153–158.
- Aliu, A., & Oladipo, A. O. (2021). Firm-specific factors and profitability of listed manufacturing firms in Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 11 (3), 38–47. <https://doi.org/10.6007/IJARAFMS/v11-i3/10460>
- Adusei, M. (2021). Leverage and profitability of banks: Evidence from sub-Saharan Africa. *Journal of Economic and Administrative Sciences*, 37 (2), 147–161. <https://doi.org/10.1108/JEAS-03-2019-0029>
- Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property* New York, NY: Macmillan
- Bunea, M. & Vasile, D. (2020). The relationship between the boards characteristics and the risk management of the Romanian banking sector. *Journal of Business Economics and Management* 21: 1248–68.
- Chitta, S. & Soni, H. (2023). The impact of financial risk management on firm performance: a study in financial management practices. *Management and Administrative professional review, Revista Gesec*, 14 (10), 18096 – 18110.
- COSO. (2017). *Enterprise Risk Management—Integrating with Strategy and Performance*. Commit of Sponsoring Organizations of the Treadway Commission.
- Ezeaku, H. C., Okoye, L. U., Nwaeze, C., & Onuoha, M. (2022). Liquidity management and financial performance of listed manufacturing firms in Nigeria. *Cogent Business & Management*, 9 (1), 2114231. <https://doi.org/10.1080/23311975.2022.2114231>
- Gatzert, N., & Martin, M. (2015). Determinants and value of enterprise risk management: Empirical evidence from the literature. *Risk Management and Insurance Review*, 18 (1), 29–53. <https://doi.org/10.1111/rmir.12028>
- Gordon, L. A., Loeb, M. P., & Tseng, C. Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*, 28 (4), 301–327. <https://doi.org/10.1016/j.jaccpubpol.2009.06.006>
- Hoyt, R. E., & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance*, 78 (4), 795–822. <https://doi.org/10.1111/j.1539-6975.2011.01413.x>
- Iatridis, G. (2018). Accounting disclosure and firms' financial attributes: evidence from the UK stock market. *International Review of Financial Analysis*, 17 (2), 219-241.
- Oghenekaro, I., O., Nkechi, J. I, Evi, P. A. (2023). Corporate risk management disclosures and financial performance of listed deposit money banks in Nigeria. *International Journal of Banking and Finance*, 9 (4), 53-77
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kapil, S., & Kapil, N. (2020). Enterprise risk management and firm performance: Evidence from India. *Global Business Review*, 21(3), 785–800.
- Kiprop, L. F. & Yegon, J. (2017). Effect of ownership structure on the relationship between risk management practices and financial performance of financial institutions in Kenya. *American Journal of Finance*, 2 (6), 108-133.
- Noja, G. G., Thalassinou, E., Cristea, M. & Grecu, I. M. (2021). The interplay between board characteristics, financial performance, and risk management disclosure in the Financial Services Sector: New Empirical Evidence from Europe. *Journal of Risk and Financial Management* 14: 79. <https://doi.org/10.3390/jrfm14020079>

- Adenle, O. E., Abidoye, O. O., Adeoye, L. A., Olu-Akinola, F. R., Ojeleye D. A. & Onibonokuta, L. O. The Influence of Risk Management Practices on the Profitability of Listed Manufacturing Firms Moderating Effect of Firm Size. *Economics Management Innovation*. 2025, 1: 34-46. ISSN 1805-353X. Available at: <http://www.emijournal.cz/>
- Manab, N. A., Kassim, I., & Hussin, M. R. (2016). Enterprise-wide risk management (EWRM) practices: Between corporate governance compliance and value creation. *Asian Economic and Financial Review*, 6 (6), 298–309.
- Mariani, D. & Suryani (2018). Pengaruh Enterprise Risk Management Disclosure, Intellectual capital disclosure, dan corporate social responsibility Disclosure terhadap Nilai Perusahaan dengan Profitabilitas sebagai Variabel Pemoderasi. *Jurnal Akuntansi dan Keuangan*, 7 (2), 119–38.
- Mokhtar, P., & Mellett, I. (2017). The extent of mandatory and voluntary risk management reporting and financial performance in annual reporting of Egyptian companies, *Journal of Risk Management in Financial Institutions*, 3 (2), 116-123.
- Munyoro, G., Mwangi, M., & Karanja, J. (2020). Effect of firm age on financial performance of listed firms in Kenya. *International Journal of Research in Business and Social Science* (2147-4478), 9(3), 193-200. <https://doi.org/10.20525/ijrbs.v9i3.680>
- Mwaniki, G. M., & Omagwa, J. (2017). Capital structure and financial performance of firms listed at the Nairobi Securities Exchange, Kenya. *International Journal of Social Sciences and Information Technology*, 3 (8), 2407–2425.
- Mwenda, B. & Ibrahim, M. (2023). Are risk management disclosures relevant to firms' profitability? A Tanzanian case, *Jurnal Ilmiah Akuntansi*, 21 (1), 1-16.
- Nyaga, E. N., Gweyi, M., & Waari, D. N. (2021). Effect of risk management practices on financial performance of dairy cooperative societies in Meru country, Kenya. *IAR Journal of Business Management*. 106-110.
- Obasi, R. O., & Nweze, A. U. (2022). Financial leverage and corporate financial performance: Evidence from Nigeria listed non-financial firms. *International Journal of Finance and Accounting*, 11 (1), 1–9. <https://doi.org/10.5923/j.ijfa.20221101.01>
- Olalekan, A., & Adeyemi, O. (2013). The impact of capital structure on the financial performance of Nigerian quoted firms. *European Journal of Social Sciences*, 30 (3), 427–441.
- Olagunju, A., Adenle, O. E., Obademi, O., Obiosa, R.T., O. & Akinola, A.O. (2023). Sustainability reporting and earnings management of listed Non-Financial Firms in Nigeria. *Journal Research paper faculty of materials science and technology in trnava slovak university of technology in Bratislava*, 31 (52). 68-83. [https://www.researchpapers.mtf.stuba.sk/?page\\_id=959](https://www.researchpapers.mtf.stuba.sk/?page_id=959) DOI 10.2478/rput-2023-0008
- Olowookere, J.K., Olagunju, A.O., Afolayan, T.I. & Adenle, O.E. (2023). Effects of managerial ownership structure and profitability on capital structure of quoted Nigeria consumer goods firms. *Scientific-Technical Journal of Moravian Business College Olomouc, Czech Republic*, 15 (2). 16-26. <http://emijournal.cz/> [http://emijournal.cz/?page\\_id=1408](http://emijournal.cz/?page_id=1408)
- Ogbo, A. I., Ezeaku, H. C., & Okeke, C. I. (2022). Effect of enterprise risk management on financial performance of selected manufacturing firms in Nigeria. *Journal of Accounting and Financial Management*, 8 (1), 15–29. <https://doi.org/10.47941/jafm.864>
- Onyali, C. I., Okafor, T. G., & Onodi, B. C. (2021). Firm size and financial performance of quoted industrial goods companies in Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 11 (2), 147–156.
- Oyerogba, E. O., Ogungbade, O. I., & Idode, P. E. (2016). The relationship between risk management practices and financial performance of the Nigerian listed banks. *Accounting management Information Journal*, 15 (3), 565-587.
- Raheman, S., Afzaand, C. I. (2019). Non-Financial Information Disclosure Influence and its influence on Firms' Profitability in Malaysia? *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4 (4), 297-306
- Salamai, A. A. (2021). Feedback and user behavior trust and reputation in risk management. *Journal of Computer Science and Information Systems*, 20.

- Siregar, N. Y. & Tiara, A. S. (2019). Pengaruh Pengungkapan Enterprise Risk Management, Intellectual Capital, Corporate Social Responsibility, dan Sustainability Report terhadap Nilai Perusahaan. *Jurnal Bisnis Darmajaya*, 5 (2), 53–79.
- Supriyadi, A. & Setyorini, C. T. (2020). “Pengaruh Pengungkapan Manajemen Risiko terhadap Nilai Perusahaan Melalui Kinerja Keuangan di Industri Perbankan Indonesia.” *Owner (Riset dan Jurnal Akuntansi)*, 4 (2), 467
- Tajudeen, A., Omankhanlen, A. E., Ailemen, I., & Ogadimma, E. C. (2020). Liquidity management and firms' profitability in Nigeria: Evidence from the manufacturing sector. *International Journal of Economics and Financial Issues*, 10 (3), 108–115.
- Uwuigbe, U., Uwuigbe, O. R., Oladipo, O., Otekunrin, A., & Falaki, K. (2020). Risk management and firm financial performance: Evidence from listed companies in Nigeria. *The Journal of Accounting and Management*, 10 (2), 38–50.
- Wahyuni, E. D., & Oktavia, I. (2020). Disclosure of enterprise risk management (ERM), company value, and profitability as moderating factors. *Jurnal Reviu Akuntansi Dan Keuangan*, 10 (2), 208. <https://doi.org/10.22219/jrak.v10i2.12934>
- Wang, W. (2020). Impact of firm size on risk management and financial performance: Evidence from China. *Asian Economic and Financial Review*, 10 (9), 1033–1045. <https://doi.org/10.18488/journal.aefr.2020.109.1033.1045>
- Wallace, R. S. O. (2018). Corporate non-financial reporting in Nigeria. *Accounting and Business Research*, 18 (72), 352-362.
- Yusuf, I. (2020). Effect of non-financial disclosure on profitability of firms listed on industrial goods sector of NSE, *Journal of Empirical Literature*, 3(3), 78-83.