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EXPORT SALES, FIRM AGE, AND REVENUE GROWTH : THEIR IMPACT ON FINANCIAL PERFORMANCE WITH DEBT MATURITY AS A MODERATOR IN INDONESIAN MANUFACTURING FIRMS

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ABSTRACT

This study investigates the effect of export sales, firm age, and revenue growth on the financial performance of manufacturing companies in the miscellaneous industry sector listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023, with debt maturity as a moderating variable. The research is motivated by the strategic importance of growth management and debt structure optimization in sustaining competitive advantage under global market pressures. A quantitative research design was employed, utilizing secondary data from audited annual reports obtained through documentation from the official IDX database and company websites. The sample consisted of 30 purposively selected companies observed over a five-year period, yielding 150 firm-year observations. Data analysis was conducted using multiple linear regression and Moderated Regression Analysis (MRA) with SPSS version 29. Prior to hypothesis testing, classical assumption tests—normality, multicollinearity, heteroscedasticity, and autocorrelation—were performed to ensure model validity. The findings reveal that export sales have no significant effect on financial performance, whereas firm age and revenue growth exert a significant positive influence. Collectively, the independent variables significantly affect financial performance. Debt maturity moderates the relationship by strengthening the effect of revenue growth and weakening the effect of firm age, but does not moderate the effect of export sales. The study contributes to the literature by integrating firm-specific characteristics and capital structure maturity in predicting profitability, offering novel insights for emerging markets. Practical implications highlight the need for managers to align debt maturity policies with revenue growth strategies while optimizing operational efficiency to enhance financial performance.

Keywords : Export Sales, Firm Age, Revenue Growth, Financial Performance, ROA, Debt Maturity, Moderated Regression

A. INTRODUCTION

The primary objective of corporate management is to maximize shareholder wealth, which is commonly reflected in increasing firm value. In capital markets, this is typically manifested through rising stock prices. As businesses grow in scale and complexity, effective management becomes increasingly essential. In modern corporate governance, owners delegate operational responsibilities to professional managers (agents), who are expected to make strategic decisions that enhance profitability and ensure business sustainability (Sari, 2015).

Financial performance serves as a crucial indicator of a firm's attractiveness to investors.

Strong financial fundamentals often signal a firm's ability to deliver higher returns, typically assessed through financial ratios. Among these, the profitability ratio particularly Return on Assets (ROA) is widely used due to its comprehensive indication of how efficiently a firm generates profits from its assets.

ROA is also a fundamental metric in evaluating the competitiveness and growth potential of companies listed on the Indonesia Stock Exchange (IDX). Solid financial performance attracts investors by showcasing the firm's profitability and investment return prospects. For managers, understanding the determinants of performance is key to strategic decision-making; for investors, it informs investment choices; and for regulators, it reflects the overall health of the capital market.

Export sales, firm age, and revenue growth are among the critical factors influencing performance. In an increasingly globalized economy, export activities are essential for expanding markets and boosting profitability. While exports can enhance firm performance by diversifying risk and leveraging comparative advantages, they also entail challenges such as logistics costs, exchange rate fluctuations, and regulatory barriers.

Firm age, defined as the duration of a company's operation, is often associated with its maturity, experience, and adaptability. Older firms may benefit from stronger reputations and accumulated knowledge. Meanwhile, sustained revenue growth signals successful market expansion and competitive strength, serving as a positive indicator for stakeholders.

Debt maturity referring to the timeframe for debt repayment also plays a key role. Short-term debt may increase liquidity risks, while long-term debt can offer financial flexibility. Strategic management of debt maturity can help firms optimize financing costs and improve overall financial performance.

Previous studies have yielded mixed findings. For instance, Pratama (2024) found that ROA positively influences firm value in IDX-listed manufacturing firms. However, Nainggolan et al. (2022) reported that firm size and sales growth had no significant effect, while leverage was influential in the food and beverage sector.

While prior research has examined these variables independently, few have explored their interactions. This research addresses that gap by analyzing the combined effects of export sales, firm age, and revenue growth on financial performance, moderated by debt maturity.

Manufacturing firms are chosen as the research sample due to their dominant representation on the IDX and significant influence on stock market dynamics. These firms transform raw materials into marketable goods, making them ideal for observing financial and operational performance across multiple dimensions.

1. Research Problem

Based on the background outlined above, the problem statement can be formulated as follows:

- The financial reports presented by public companies do not always reflect the actual conditions of the company, which may lead to the dissemination of incorrect information to stakeholders.
- The financial reports used as decision-making tools do not meet quality standards due to manipulation.
- Previous studies on the influence of company characteristics on the quality of financial reporting have produced differing conclusions.

2. Research Question

Based on the above problem Problem, the research questions raised are as follows: Does export
sales affect the firm's financial performance?

- Does firm age affect the firm's financial performance?
- Does revenue growth affect the firm's financial performance?
- Do the independent variables jointly affect the firm's financial performance?
- Does debt maturity moderate the effect of export sales on the firm's financial performance?
- Does debt maturity moderate the effect of firm age on the firm's financial performance?
- Does debt maturity moderate the effect of revenue growth on the firm's financial performance?

3. Research Aim

This research aims to investigate the influence of export sales, firm age, and revenue growth on the firm's financial performance. It further seeks to examine the moderating role of debt maturity in the relationship between these independent variables and financial performance. By analyzing both the individual and joint effects of the variables, the research intends to provide a comprehensive understanding of how firm characteristics and strategic debt structuring impact overall financial outcomes, particularly in manufacturing firms listed on the Indonesia Stock Exchange.

4. Research Contribution

This research contributes to the growing body of literature on firm performance by providing empirical evidence on the effects of export sales, firm age, and revenue growth on financial performance, with debt maturity as a moderating variable. The research offers practical insights for business practitioners in understanding how firm-specific characteristics and debt structure can influence financial outcomes, especially in the context of manufacturing firms in emerging markets such as Indonesia. For academics, this research serves as a valuable reference for future research related to financial reporting quality and firm characteristics. Additionally, it enhances the author's understanding and experience in evaluating firm performance through the lens of financial decision-making and corporate transparency.

B. LITERATURE REVIEW

1. Agency Theory

Agency theory, introduced by Jensen and Meckling (1976), describes a contractual relationship between the principal (shareholder) and agent (manager), where the agent is expected to act in the principal's best interest. However, due to information asymmetry and self-interest behavior, agents may engage in earnings management to maximize personal gain. Wahidahwati (2001) proposed several mechanisms to reduce agency conflict, including managerial ownership, institutional monitoring, higher dividend payout ratios, and increased use of debt to reduce free cash flow misuse.

2. Signaling Theory

Signaling theory emphasizes the importance of information disclosure by firms to reduce information asymmetry in capital markets. According to Ivana (2005, in Putra & Chabachib, 2013), the release of financial reports sends signals about a company's future prospects. Transparent disclosures attract investors, influencing stock trading volume. Annual reports serve as essential signals, comprising both financial and non-financial information, and help investors assess firm value and risks.

3. Financial Statements

Financial statements communicate a firm's financial performance and position. As per PSAK No. 1 (2015), they offer structured data to help users make economic decisions and evaluate management accountability. Financial statements are critical tools for assessing past performance and forecasting future prospects (Andinata, 2010).

4. Firm Financial Performance

Firm performance indicates the effectiveness of a company in implementing strategies to achieve

its goals. Kaplan & Norton (1996) introduced the Balanced Scorecard, which considers financial and non-financial perspectives. Financial performance is commonly assessed using profitability ratios such as Return on Assets (ROA) and Return on Equity (ROE), as used in studies by Seng & Ling (2008), Nirmalasari (2010), and Abdallah & Ismail (2016).

5. Export Sales

Exports are goods or services produced domestically and sold abroad. Based on Mankiw (2014) and Government Regulation No. 10/2021, exports play a strategic role in expanding market reach and enhancing of international competitiveness. Kotler & Keller (2016) noted that exports are a vital strategic option for firm growth, while Tambunan (2021) highlighted their significance in measuring competitiveness, especially in manufacturing sectors.

6. Firm Age

Firm age refers to the duration a company has been listed on the stock exchange. Older firms often demonstrate greater disclosure experience and resilience to external shocks (Untari, 2010; Prima & Keni, 2013). According to Mardiani (2019), mature firms typically maintain higher transparency and reporting quality, enhancing accountability and stakeholder trust.

7. Revenue Growth

Revenue growth reflects a firm's success in expanding its operations and market share. It is typically measured as the percentage increase in revenue over a specific period. Manurung (2007) emphasized its role in forecasting future performance, while Brigham & Houston (2019) described it as a key indicator of corporate vitality and competitive strength.

8. Debt Maturity

Debt maturity involves decisions regarding the term structure of debt short-term vs. long-term. As per Sutikno (2019), it is a strategic tool to align funding needs with investment horizons. Properly structured debt maturity can minimize agency problems related to inefficient investment decisions (Marsya & Dewi, 2022), helping balance liquidity and control risks.

C. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The conceptual framework is derived from the theoretical framework discussed in the literature review. It serves as a visual representation of the relationships among variables as formulated by the researcher based on various theories and prior empirical studies (Masturoh & Nauri, 2018). This framework provides direction and a clear depiction of the structural relationships between the variables studied in this research. It is essential as a foundation for constructing the research methodology and hypothesis testing.

This research aims to analyze how each independent variable affects firm financial performance, both individually and simultaneously. Furthermore, this research investigates whether the debt maturity variable moderates the relationship between the independent and dependent variables.

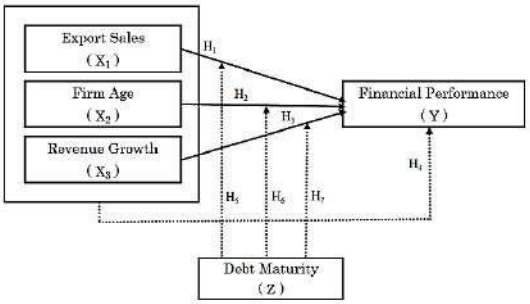


Figure 1 : Conceptual Framework

- **Export Sales and Financial Performance**

Export sales represent a key strategy for firms seeking to expand market share and improve profitability, particularly in manufacturing sectors with high production capacity. Exporting provides access to broader international markets and enhances economies of scale. According to the *Comparative Advantage Theory* (Ricardo) and *Resource-Based View* (RBV), firms with superior internal capabilities can gain competitive advantages and improved financial performance through exports. Empirical findings (e.g., Hidayat & Rizki, 2021; Yuliana & Siregar, 2022) support the positive link between export activities and financial indicators such as ROA and ROE.

H1 : Export sales have a positive effect on firm financial performance.

- **Firm Age and Financial Performance**

Firm age reflects business maturity, experience, and operational learning. Older firms are expected to have developed financial systems, managerial efficiency, and stronger market reputations. According to the *Organizational Learning Theory*, older firms accumulate knowledge, enhance decision-making, and enjoy better access to capital. Research by Setyawati & Taryana (2021) and Dewi & Wibowo (2023) confirms that older firms tend to achieve better financial outcomes due to more mature systems and efficient cost structures.

H2 : Firm age has a positive effect on financial performance.

- **Revenue Growth and Financial Performance**

Revenue growth indicates a firm's ability to increase sales and market share, which typically leads to improved financial performance. This aligns with the *Growth of Firm Theory*, suggesting that firms with consistent revenue growth signal operational efficiency and adaptability. Empirical studies (Kurniawan & Putri, 2021; Mulyani & Prasetya, 2022) find significant positive effects of revenue growth on profitability and financial indicators.

H3 : Revenue growth has a positive effect on financial performance.

- **Simultaneous Effect of Export Sales, Firm Age, and Revenue Growth on Financial Performance**

These three internal factors export sales, firm age, and revenue growth collectively reflect a firm's strategic capacity to optimize operations, adapt to markets, and boost profitability. Together, they

represent operational experience, market reach, and financial adaptability. Prior studies (e.g., Yulinda & Putra, 2022; Kurniawan & Putri, 2021) affirm that the combination of internal strengths contributes significantly to overall financial performance.

H_4 : Export sales, firm age, and revenue growth simultaneously affect financial performance.

- **Debt Maturity as a Moderator between Export Sales and Financial Performance**

Debt maturity refers to the structure of a firm's debt in terms of its short- and long term obligations. According to the *Trade-Off Theory*, the optimal debt maturity structure minimizes liquidity risk and enhances operational flexibility, especially during export-driven expansion. Studies by Ghozali & Ratmono (2021) and Darmawan & Gunawan (2023) suggest that effective debt maturity management strengthens the link between export activities and financial outcomes.

H_5 : Debt maturity moderates the relationship between export sales and financial performance.

- **Debt Maturity as a Moderator between Firm Age and Financial Performance**

While older firms may benefit from accumulated experience, they may also face risks such as rigidity and inefficiency. Debt maturity serves as a moderating factor by influencing financial flexibility and risk exposure. Firms with optimal debt maturity structures can leverage their experience while maintaining financial discipline. Research supports that debt maturity moderates the impact of firm age on financial outcomes (Utami & Ramadhan, 2021).

H_6 : Debt maturity moderates the relationship between firm age and financial performance.

- **Debt Maturity as a Moderator between Revenue Growth and Financial Performance**

Revenue growth requires significant capital and financial stability. The ability to manage debt maturity allows firms to fund their growth while mitigating financial risks. According to financial management principles, matching revenue cycles with debt maturities ensures smoother cash flows and better performance outcomes. Empirical studies support the moderating role of debt maturity in the growth performance relationship (Darmawan & Gunawan, 2023).

H_7 : Debt maturity moderates the relationship between revenue growth and financial performance.

D. RESEARCH METHODOLOGY

1. Research Type

This research applies a quantitative, observational-analytic approach to examine the relationship between export sales, firm age, and revenue growth (independent variables) and financial performance measured by Return on Assets (ROA) as the dependent variable. Debt maturity is included as a moderating variable.

As a correlational research, it investigates associations among variables without manipulation. Secondary data were collected from annual financial reports of manufacturing companies in the miscellaneous industry sector listed on the Indonesia Stock Exchange (IDX), using documentation techniques from official and reliable sources.

This approach enables objective, statistical analysis of financial data, allowing empirical testing and scientific interpretation of the observed relationships.

2. Population and Sample

The population of this research comprises all manufacturing companies in the miscellaneous industry sector listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. This sector was selected due to its active involvement in export activities and diverse capital structure, particularly in terms of debt maturity. The five-year observation period was chosen to ensure data stability, trend analysis, and a more representative view of financial performance (ROA), export sales, firm age, revenue growth, and debt maturity.

The sample was determined using purposive sampling, based on specific criteria aligned with the research objectives. The criteria are as follows :

- Listed as a manufacturing company in the miscellaneous industry sector on the IDX.
- Published complete, audited annual financial reports for each year from 2019 to 2023.
- Reports use IDR currency, have a fiscal year ending on December 31, and maintain consistent reporting standards.
- Actively engaged in export activities, with export sales explicitly disclosed in the financial statement notes (CALK) for all five years.
- Not under special monitoring, delisted, or sanctioned by the IDX during the observation period.

This sampling approach ensures data relevance and validity for analyzing the relationships among the research variables within the defined model.

3. Data Collection Method

Data were processed and analyzed using IBM SPSS Statistics version 29, chosen for its reliability in conducting statistical modeling, regression analysis, and assumption testing. This research employed a quantitative approach using secondary data obtained from reliable sources. Data were collected through a combination of literature review and documentation. The literature review involved examining relevant theories, prior studies, and academic references to support the research framework and identify gaps. Documentation involved gathering financial data from annual reports (2019–2023) of manufacturing companies in the miscellaneous industry sector listed on the IDX, including export sales disclosures, firm age, revenue growth, ROA, and debt maturity structure. All data were sourced from the official IDX website, company websites, and trusted financial data platforms, following a structured process to ensure data validity and reliability.

4. Data Analysis Method

To evaluate the proposed hypotheses, this research applied multiple linear regression analysis to investigate the influence of Export Sales (X_1), Firm Age (X_2), and Revenue Growth (X_3) on Financial Performance (Y), as measured by Return on Assets (ROA). Furthermore, Moderated Regression Analysis (MRA) was employed to assess whether Debt Maturity (Z) moderates the relationship between each independent variable and ROA. This method allows the interaction effects between the independent and moderating variables to be captured through the inclusion of product terms in the regression model.

Before conducting the regression, a series of classical assumption tests were performed to ensure the reliability of the model. These included:

- **Normality test**, using the Kolmogorov-Smirnov test, to confirm whether the residuals follow a normal distribution;
- **Multicollinearity test**, using Tolerance and Variance Inflation Factor (VIF), to assess potential

correlation among independent variables;

- **Heteroskedasticity test**, using scatterplots of standardized residuals, to examine variance consistency of residuals;
- **Autocorrelation test**, using the Durbin-Watson statistic, to detect correlation among residuals across observations.

Descriptive statistics such as mean, standard deviation, minimum, and maximum were used to provide a general overview of the data distribution for each variable.

The basic **multiple linear regression** equation used is as follows:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon.}$$

Notes:
Y = Return on Assets, as an indicator of financial performance *(dependent variable)*
X_1 = Export Sales *(independent variable)*
X_2 = Firm Age *(independent variable)*
X_3 = Revenue Growth *(independent variable)*
β_0 = Constant (intercept)
β_1–β_3 = Regression coefficients for each independent variable
ε = Error term (residual),

where Y denotes ROA, and ε represents the error term. For **the moderation analysis**, the regression equation was extended by incorporating interaction terms:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 Z + \beta_5 X_2 Z + \beta_6 X_3 Z + \varepsilon,}$$

Notes:
Y = Return on Assets, as an indicator of financial performance *(dependent variable)*
X_1 = Export Sales *(independent variable)*
X_2 = Firm Age *(independent variable)*
X_3 = Revenue Growth *(independent variable)*
Z = Debt Maturity *(moderating variable)*
X_1Z = Interaction between Export Sales and Debt Maturity
X_2Z = Interaction between Firm Age and Debt Maturity
X_3Z = Interaction between Revenue Growth and Debt Maturity
β_0 – β_6 = Regression coefficients
ε = Error term

where Z represents Debt Maturity and XZ terms capture the moderating effect. The significance of the models and variables was tested using the coefficient of determination (R^2) to assess explanatory power, t-tests for individual variable significance, and F-tests for overall model fit.

5. Variables and Operational Definitions

This research involves three types of variables: independent variables, dependent variable, and moderating variable. According to Sugiyono (2009), an independent variable is a factor that influences or causes changes in the dependent variable. A dependent variable is affected by the independent variable, while a moderating variable serves to strengthen or weaken the relationship between the two.

The objective of this research is to examine the effects of export sales, firm age, and revenue

growth on corporate financial performance (measured by Return on Assets or ROA), with debt maturity acting as a moderating variable. The operational definitions of each variable are as follows :

- **Export sales** refer to the proportion of a firm's total sales derived from international markets. It reflects a firm's ability to penetrate global markets and is expected to improve financial performance.

$$\text{Export Sales Ratio} = \left(\frac{\text{Export Sales}}{\text{Total Sales}}\right) \times 100\%$$

- **Firm age** indicates the number of years since the company's establishment. It serves as a proxy for organizational maturity and operational stability.

$$\text{Firm Age} = \text{Observation Year} - \text{Establishment Year}$$

- **Revenue growth** measures the annual increase in a firm’s revenue, indicating its ability to expand business activities and generate higher income.

$$\text{Revenue Growth} = \left(\frac{\text{Revenue}_t - \text{Revenue}_{t-1}}{\text{Revenue}_{t-1}}\right) \times 100\%$$

- **Debt maturity** refers to the proportion of long-term debt to total debt, indicating the structure and risk profile of the firm’s liabilities. It moderates the relationship between the independent variables and financial performance.

$$\text{Debt Maturity} = \left(\frac{\text{Long-term Debt}}{\text{Total Debt}}\right) \times 100\%$$

- **Financial Performance** (ROA) Return on Assets (ROA) reflects a firm's ability to generate net income from its total assets, serving as a key indicator of financial efficiency.

$$\text{ROA} = \left(\frac{\text{Net Income}}{\text{Total Assets}}\right) \times 100\%$$

E. RESULT AND DISCUSSION

This research investigates manufacturing companies in the miscellaneous industry sector listed on the Indonesia Stock Exchange (IDX) over the 2019–2023 period. A purposive sampling technique was applied to obtain relevant and representative data, resulting in 30 companies that met the established criteria. These firms were selected based on data completeness, consistency, and the availability of export-related disclosures.

A total of 150 firm-year observations were analyzed (30 companies across 5 years), derived from audited annual reports. The limited sample size reflects the specific focus on export-active firms and the restricted public disclosure of export data. Nevertheless, the sample is considered sufficient for the

multiple linear regression method employed, and it provides meaningful insight into the impact of the independent variables on corporate financial performance in the targeted sector.

Descriptive Analysis Statistic

Table 1 Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ekspor (X1)	150	.0016	.9738	.246260	.2894206
Umur (X2)	150	13	110	48.90	19.415
Pendapatan (X3)	150	-.6622	.8501	.068591	.2406259
Kinerja Perusahaan (Y)	150	-.9489	.2817	.056990	.1121185
Debt Maturity (Z)	150	.0515	3.6699	.339969	.3365867
Valid N (listwise)	150				

Table 1 presents the descriptive statistics for all variables used in this research, based on 150 observations from manufacturing firms. The **Export Sales (X1)** variable has a mean value of 0.2462 and a standard deviation of 0.2894, indicating that export activities, on average, constitute a relatively small portion of total sales. The export ratio ranges from as low as 0.0016 to as high as 0.9738, reflecting substantial variation among firms—from those with minimal export contributions (e.g., PT Hanjaya Mandala Sampoerna Tbk) to those where exports dominate sales (e.g., PT Sekar Bumi Tbk).

The **Firm Age (X2)** shows a mean of 48.90 years and a standard deviation of 19.415. The youngest firm in the sample is 13 years old (PT Wahana Interfood Nusantara Tbk), while the oldest is 110 years old (PT Hanjaya Mandala Sampoerna Tbk), indicating a wide diversity in firm maturity.

The **Revenue Growth (X3)** variable has a mean of 0.0686 with a standard deviation of 0.2406. The minimum value of -0.6622 suggests that some firms experienced significant revenue decline, while the maximum value of 0.8501 reflects strong positive growth in others.

Firm Performance (Y), measured by Return on Assets (ROA), has an average of 0.0569 and a standard deviation of 0.1121. The minimum value of -0.9489 implies that certain firms suffered considerable losses, whereas the maximum value of 0.2817 indicates healthy asset returns in others.

Lastly, the **Debt Maturity (Z)**, serving as the moderating variable, has a mean of 0.3399 and a standard deviation of 0.3366. The wide range between 0.0515 and 3.6699 suggests significant differences in long-term debt maturity structures, potentially impacting firms' long-term financial stability.

Normality Test

The normality test was conducted to examine whether the residuals from both regression models are normally distributed. As presented in Table 4.9, the Asymp. Sig (2-tailed) value for **Model 1** is 0.351, which exceeds the threshold of 0.05, indicating that the residuals are normally distributed. Similarly, **Model 2**, which includes the moderating variable Debt Maturity, shows an Asymp. Sig value of 0.630—also greater than 0.05—confirming that its residuals follow a normal distribution.

Table 2 Normality Test for Model 1 & 2

Model	Asymp. Sig	Description
Model 1 (Without Moderating Variable)	0,351 > 0,05	Normally Distributed
Model 2 (With Moderating Variable)	0,630 > 0,05	Normally Distributed

These findings are further supported by the Normal P-P Plot graphs, which demonstrate that the

observed residuals closely align with the expected normal distribution line, reinforcing the assumption

of normality for both models.

Chart 1 Normal Plot Model 1

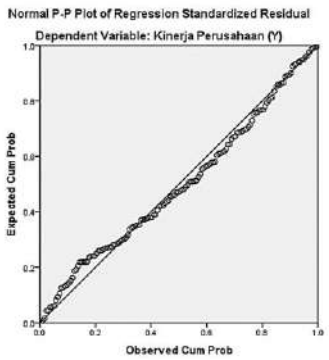
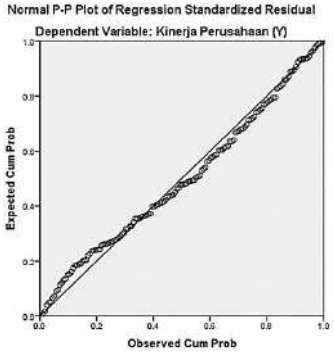


Chart 2 Normal Plot Model 2



Multicollinearity Test

Table 3 Multicollinearity Test Model 1

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Ekspor (X1)	.970	1.030
	Umur (X2)	.965	1.037
	Pendapatan (X3)	.985	1.015

a. Dependent Variable: Kinerja Perusahaan (Y)

Table 4 Multicollinearity Test Model 2

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Ekspor (X1)	.970	1.031
	Umur (X2)	.939	1.065
	Pendapatan (X3)	.964	1.038
	Debt Maturity (Z)	.956	1.046

a. Dependent Variable: Kinerja Perusahaan (Y)

Tables 3 and 4 present the results of the multicollinearity test for both regression models. All independent variables exhibit **Tolerance values greater than 0.1** and **Variance Inflation Factor (VIF) values less than 10**. These results indicate that **no multicollinearity** is present among the explanatory variables, and thus the regression models meet the assumption of independent predictors.

Heteroskedasticity Test

Chart 3 Heteroskedasticity Test Model 1

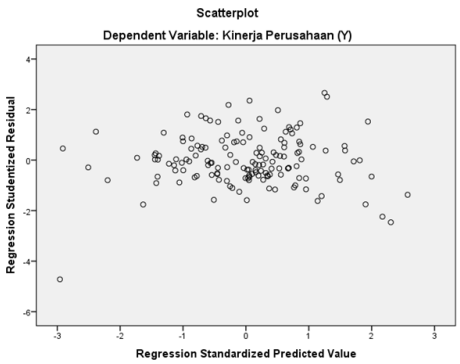


Chart 3 Heteroskedasticity Test Model 2

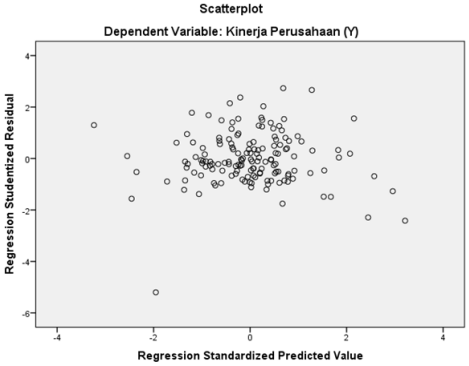


Chart 3 and 4 illustrate the scatterplots of the standardized residuals against the predicted values for both regression models. The plots show that the data points are randomly dispersed and distributed both above and below the zero line on the Y-axis. This random and patternless spread indicates the absence of heteroskedasticity in the regression models, confirming that the assumption of constant variance of residuals is satisfied.

Autocorrelation Test

Table 5
Autocorrelation Test
Model 1

Model Summary[b]

Model	Durbin-Watson
1	1.888[a]

a. Predictors: (Constant), Pendapatan (X3), Ekspor (X1), Umur (X2)

b. Dependent Variable: Kinerja Perusahaan (Y)

Table 6
Autocorrelation Test
Model 2

Model Summary[b]

Model	Durbin-Watson
1	1.834[a]

a. Predictors: (Constant), Debt Maturity (Z), Pendapatan (X3), Ekspor (X1), Umur (X2)

b. Dependent Variable: Kinerja Perusahaan (Y)

The Durbin–Watson (DW) test was used to detect autocorrelation in the residuals of the regression models. For **Model 1**, with a sample size of $n = 150$ and $k = 3$ independent variables, the Durbin–Watson statistic is 1.888. The critical values are du = 1.7741 and 4 – du = 2.2259, resulting in the decision rule du < d < 4 – du or **1.7741 < 1.888 < 2.2259**. This confirms that there is no evidence of positive or negative autocorrelation in Model 1.

Similarly, for **Model 2**, which includes a moderating variable ($k = 4$), the Durbin–Watson value is **1.834**, with critical values du = 1.7881 and 4 – du = 2.2119. Since **1.7881 < 1.834 < 2.2119**, it can also be concluded that Model 2 is free from autocorrelation.

These results indicate that both regression models meet the assumption of independent residuals.

Multiple Linear Regression Analysis

Table 7 Multiple Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error
1	(Constant)	.155	.038
	Pendapatan (X3)	.030	.013
	Ekspor (X1)	-.011	.010
	Umur (X2)	-.025	.010

a. Dependent Variable: Kinerja Perusahaan (Y)

Based on Table 7, the multiple linear regression equation derived is : **ROA = 0.155 – 0.011X_1 – 0.025X_2 + 0.030X_3**. The constant coefficient (0.155) indicates that when all independent variables are zero, the predicted Return on Assets (ROA) is 0.155. The coefficient of Export Sales (X_1) is -0.011, meaning that a one-unit increase in export sales, holding other variables constant, leads to a decrease in ROA by 0.011. Firm Age (X_2) has a regression coefficient of -0.025, suggesting that each additional year in firm age decreases ROA by 0.025, assuming other factors remain unchanged. Conversely, Revenue Growth (X_3) positively affects ROA, with a coefficient of 0.030, indicating that a one-unit increase in revenue growth raises ROA by 0.030.

Moderated Regression Analysis (MRA)

Table 8 Moderated Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	.174	.040
	Ekspor (X1)	-.048	.022
	Umur (X2)	-.027	.010
	Pendapatan (X3)	.021	.027
	Ekspor (X1) * Debt Maturity (Z)	.166	.085
	Umur (X2) * Debt Maturity (Z)	-.015	.006
	Pendapatan (X3) * Debt Maturity (Z)	.041	.105

a. Dependent Variable: Kinerja Perusahaan (Y)

Based on the regression results, the moderation model is expressed as : ROA = **0.174 – 0.048X_1 – 0.027X_2 + 0.021X_3 + 0.166X_1Z – 0.015X_2Z + 0.041X_3Z**. The constant value of 0.174 indicates the predicted ROA when all independent and moderating variables are zero. Export Sales (X_1) and Firm Age (X_2) have negative coefficients (–0.048 and –0.027), suggesting that increases in these variables decrease ROA.

Conversely, Revenue Growth (X_3) has a positive effect with a coefficient of 0.021. The interaction term X_1Z (Export Sales × Debt Maturity) has a positive coefficient (0.166), indicating that Debt Maturity positively moderates the effect of Export Sales on ROA, reducing its negative impact. X_2Z (Firm Age × Debt Maturity) has a negative interaction effect (–0.015), implying that higher Debt Maturity strengthens the negative relationship between firm age and ROA. Finally, X_3Z (Revenue Growth × Debt Maturity) shows a modest positive moderating effect (0.041), suggesting that Debt Maturity slightly enhances the positive influence of revenue growth on ROA.

Hypothesis Testing

This section evaluates the regression model using the coefficient of determination (R^2) to measure explanatory power, the F-test to assess overall model significance, and the t-test to examine the individual effects of independent variables and interaction terms, including the moderating variable.

- **Determinant Coefficient Test**

Table 9 R-Square Test Model 1

Table 10 R-Square Test Model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568[a]	.323	.309	.03133

a. Predictors: (Constant), Pendapatan (X3), Ekspor (X1), Umur (X2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568[a]	.323	.309	.03133

a. Predictors: (Constant), Pendapatan (X3), Ekspor (X1), Umur (X2)

Based on Table 9 and 10, the Adjusted R-Square value in **Model 1** is 0.323, indicating that export sales, firm age, and revenue growth explain 32.3% of the variation in financial performance. In **Model 2**, after including the moderating variable debt maturity, the Adjusted R-Square increases to 0.427 or 42.7%, suggesting that the presence of debt maturity strengthens the relationship between the independent variables and financial performance. This confirms that debt maturity plays a significant moderating role in enhancing the predictive power of the model for manufacturing companies in the miscellaneous industry sector listed on the Indonesia Stock Exchange during 2019–2023.

- **Significance t-Test**

Table 11 Significance t-Test

Coefficients[a]

Model		t	Sig.
1	(Constant)	-1.066	.288
	Ekspor (X1)	.956	.320
	Umur (X2)	-2.138	.034
	Pendapatan (X3)	3.948	.000

a. Dependent Variable: Kinerja Perusahaan (Y)

Based on Table 11, the t-test results for the independent variables show that export sales (X_1) has a t-value of 0.956 and a significance level of 0.320, indicating no significant effect on financial performance (**H1 is rejected**). Firm age (X_2) has a t-value of –2.138 and a significance of 0.034, indicating a significant negative effect on financial performance (**H2 is accepted**). Revenue growth (X_3) has a t-value of 3.948 and a significance of 0.000, demonstrating a significant positive effect on financial performance (**H3 is accepted**).

Table 12 Moderation Significance t-Test

Coefficients[a]

Model		t	Sig.
1	(Constant)	10.208	.000
	Ekspor (X1) * Debt Maturity (Z)	.348	.728
	Umur (X2) * Debt Maturity (Z)	-1.099	.004
	Pendapatan (X3) * Debt Maturity (Z)	2.283	.016

a. Dependent Variable: Kinerja Perusahaan (Y)

Moderation Analysis (Table 12) : the interaction between export sales and debt maturity (X_1Z) has a t-value of 0.348 and a significance of 0.728, indicating no moderating effect (H5 is rejected). The interaction between firm age and debt maturity (X_2Z) has a t-value of –1.099 and a significance of 0.004, showing a significant moderating effect (H6 is accepted). The interaction between revenue growth and debt maturity (X_3*Z) has a t-value of 2.283 and a significance of 0.016, also indicating a significant moderating effect (H7 is accepted).

- **Overall F Test**

Table 13 F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.068	3	.023	23.182	.002[b]
	Residual	.143	146	.001		
	Total	.212	149			

a. Dependent Variable: Kinerja Perusahaan (Y)

b. Predictors: (Constant), Pendapatan (X3), Ekspor (X1), Umur (X2)

Table 5.13 presents the F-test results for the baseline model, which includes the independent variables only (export sales, firm age, and revenue growth). The calculated F-statistic (23.182) exceeds the critical value of 2.67 at $\alpha = 0.05$ ($p = 0.002 < 0.05$), indicating that, jointly, the independent variables have a positive and significant effect on the financial performance (ROA). This confirms that the model is overall significant, and **H4 is accepted**. There are no moderating variables involved in this F-test.

Hypotheses Discussion

The results of this research offer valuable insights into how export sales, firm age, and revenue growth individually and collectively impact a company's financial performance, as well as the moderating role of debt maturity.

Impact of Export Sales on Financial Performance : The research finds no significant effect of export sales on financial performance. This suggests that despite export activities, factors like exchange rate fluctuations, global demand uncertainty, and high logistical costs may hinder profitability. This aligns with Pratiwi (2020), who argued that external factors limit export benefits, contrasting with Dewi and Widanaputra (2016), who found export activities to boost financial performance.

Impact of Firm Age on Financial Performance : Firm age shows a negative and significant relationship with financial performance. Older firms may face stagnation due to organizational inertia, inefficiencies, and high historical costs. This result agrees with Nuraini and Darmawan (2021) but contrasts with Utami and Darmawan (2019), who suggested that experience and resource access in older firms improve financial outcomes.

Impact of Revenue Growth on Financial Performance : Revenue growth significantly and positively influences financial performance. Companies with growing revenues can cover fixed costs and enhance profit margins, driving overall financial health. This finding is supported by Fitriani and Lestari (2020) and Nasir and Rahmawati (2018), who highlighted revenue growth as a key indicator of long-term profitability.

Simultaneous Impact of Export Sales, Firm Age, and Revenue Growth on Financial Performance : When considered together, export sales, firm age, and revenue growth significantly impact financial performance. This emphasizes the importance of a multidimensional approach to financial analysis, as interactions between these factors create a synergistic effect on company performance, in line with Suryani and Haryanto (2020).

Moderating Effect of Debt Maturity on the Relationship Between Export Sales and Financial Performance : Debt maturity does not moderate the relationship between export sales and financial performance. This indicates that debt maturity is not a key factor in enhancing the financial impact of export activities, contrasting with Putri and Nugroho (2019), who found long-term debt structures helpful in mitigating global market risks.

Moderating Effect of Debt Maturity on the Relationship Between Firm Age and Financial Performance : Debt maturity significantly moderates the relationship between firm age and financial

performance. Older firms with effective debt management can better align operational capacity with

financial obligations, leading to improved performance. This finding aligns with Kusuma and Rachmawati (2021), who emphasized the importance of matching firm age with debt structure for sustainability.

Moderating Effect of Debt Maturity on the Relationship Between Revenue Growth and Financial Performance : Debt maturity strengthens the relationship between revenue growth and financial performance. For growing firms, a well-managed debt maturity structure provides flexibility in managing cash flows and supporting business expansion, supporting Handayani and Hartono (2020), who highlighted the importance of debt management in growth strategies.

These findings underscore the need for companies to consider both internal and external factors, as well as strategic debt management, to optimize their financial performance.

Research Implications

This research offers both theoretical and practical implications. **Theoretically**, it enriches the literature on corporate financial performance by highlighting that export sales do not necessarily improve financial outcomes without strategic alignment, challenging the assumption that exports inherently enhance profitability. The negative impact of firm age underscores the importance of considering the corporate life cycle in performance assessment, while the positive effect of revenue growth and the moderating role of debt maturity reinforce their relevance as strategic financial indicators.

Practically, the findings suggest that manufacturing firms should not rely solely on exports to boost performance but must improve export efficiency, manage risks, and diversify markets. Older firms should invest in innovation and organizational renewal to stay competitive, while those experiencing revenue growth need sound financial management to sustain momentum. An appropriate debt maturity structure is essential for supporting long-term performance and mitigating financial risks in growing firms.

Research Limitation

This research has several limitations that should be considered to avoid overgeneralization. First, the sample is limited to manufacturing companies listed on the Indonesia Stock Exchange, making the findings less applicable to other sectors such as services, finance, or mining. Second, financial performance is measured solely using Return on Assets (ROA), while broader indicators like Return on Equity (ROE), Net Profit Margin (NPM), or operational efficiency ratios were not included. Third, debt maturity is only assessed through the proportion of long-term debt to total debt, without considering other important aspects such as interest structure, loan tenor, or covenant terms. Lastly, the research covers a relatively short observation period (2019–2023), which may not fully capture the effects of broader macroeconomic trends or global market dynamics. Future research is encouraged to address these limitations by using more comprehensive variable models and extending the research period.

F. CONCLUSION

Theoretical Implications

This study provides empirical evidence on the influence of export sales, firm age, and revenue growth on the financial performance of manufacturing companies, with debt maturity as a moderating variable. The findings strengthen the body of knowledge in financial management, particularly in understanding how internal company characteristics interact with capital structure maturity to determine profitability. By incorporating debt maturity as a moderator, this research extends previous studies,

offering a more nuanced understanding of financial decision-making in emerging markets.

Practical Implications

For corporate managers, the results highlight the importance of aligning long-term debt maturity structures with revenue growth strategies to optimize financial performance. Firms should monitor their debt maturity profiles to maintain financial flexibility while minimizing liquidity risk. Additionally, while export sales alone may not significantly enhance profitability, integrating export strategies with operational efficiency and effective debt management could yield better financial outcomes.

Novelty

The novelty of this research lies in its integrative model that simultaneously examines export sales, firm age, and revenue growth in relation to financial performance while considering debt maturity as a moderating factor. Unlike most previous studies that analyze these variables separately, this study provides a comprehensive approach, particularly in the context of Indonesia's miscellaneous manufacturing sector during the 2019–2023 period. The application of Moderated Regression Analysis (MRA) offers deeper insight into how capital structure maturity interacts with firm characteristics.

Suggestions

Future research could expand the scope by including macroeconomic variables such as exchange rate volatility, inflation, or interest rate movements as additional moderators. Using alternative financial performance indicators such as ROE, Tobin's Q, or EVA could also provide a broader perspective. From a managerial standpoint, companies are advised to develop integrated financial and operational strategies, ensuring that growth initiatives are supported by optimal debt structures.

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