

Operating Cash Flow Volatility, Sales Volatility, Debt Level, and Earnings Persistence: The Moderating Role of Firm Size in Indonesia's Food and Beverage Industry

Annisa Eka Fatmawati

Fakultas Ekonomi dan Bisnis, Universitas Wijaya Putra Surabaya

Email: 24012038@student.uwp.ac.id

Abstract

This study aims to examine the effect of operating cash flow volatility, sales volatility, and debt level on earnings persistence, with firm size serving as a moderating variable, in food and beverage companies listed on the Indonesia Stock Exchange during the 2021–2023 period. A quantitative research approach was employed using secondary data obtained from annual financial statements. The sample consisted of 39 companies, resulting in 117 firm-year observations selected through purposive sampling. Data were analyzed using multiple linear regression and Moderated Regression Analysis (MRA). The findings reveal that operating cash flow volatility has no significant effect on earnings persistence. In contrast, sales volatility and debt level have a positive and significant effect on earnings persistence. Furthermore, firm size significantly moderates the relationship between operating cash flow volatility and earnings persistence but does not moderate the relationships between sales volatility, debt level, and earnings persistence. These findings indicate that earnings sustainability is more strongly influenced by effective sales management, capital structure decisions, and firms' ability to manage cash flow fluctuations than by the stability of operating cash flows alone. The study provides theoretical implications by extending the application of Signaling Theory and Agency Theory in explaining earnings persistence, while offering practical implications for corporate managers, investors, and creditors in improving earnings quality through effective operational and financial management. The novelty of this study lies in examining the moderating role of firm size in the relationship between operating cash flow volatility, sales volatility, debt level, and earnings persistence within Indonesia's food and beverage industry.

Keywords: Earnings persistence; operating cash flow volatility; sales volatility; debt level; firm size; moderation.

Abstrak

Penelitian ini bertujuan menganalisis pengaruh volatilitas arus kas operasi, volatilitas penjualan, dan tingkat hutang terhadap persistensi laba dengan ukuran perusahaan sebagai variabel moderasi pada perusahaan sub sektor makanan dan minuman yang terdaftar di Bursa Efek Indonesia periode 2021–2023. Penelitian menggunakan pendekatan kuantitatif dengan data sekunder yang diperoleh dari laporan keuangan tahunan perusahaan. Sampel ditentukan melalui teknik purposive sampling sehingga diperoleh 39 perusahaan dengan total 117 observasi. Analisis data dilakukan menggunakan regresi linier berganda dan *Moderated Regression Analysis* (MRA). Hasil penelitian menunjukkan bahwa volatilitas arus kas operasi tidak berpengaruh signifikan terhadap persistensi laba. Sebaliknya, volatilitas penjualan dan tingkat hutang berpengaruh positif dan signifikan terhadap persistensi laba. Selain itu, ukuran perusahaan terbukti mampu memoderasi pengaruh volatilitas arus kas operasi terhadap persistensi laba, tetapi tidak memoderasi pengaruh volatilitas penjualan maupun tingkat hutang terhadap persistensi laba. Temuan ini mengindikasikan bahwa keberlanjutan laba lebih

dipengaruhi oleh efektivitas pengelolaan penjualan, struktur pendanaan, dan kapasitas perusahaan dalam mengelola fluktuasi arus kas dibandingkan semata-mata oleh stabilitas arus kas operasi. Penelitian ini memberikan implikasi teoretis dengan memperkuat penerapan *Signaling Theory* dan *Agency Theory* dalam menjelaskan determinan persistensi laba serta memberikan implikasi praktis bagi manajemen, investor, dan kreditur dalam meningkatkan kualitas laba melalui pengelolaan operasional dan struktur modal yang optimal. Kebaruan penelitian terletak pada pengujian peran moderasi ukuran perusahaan dalam hubungan antara volatilitas arus kas operasi, volatilitas penjualan, tingkat hutang, dan persistensi laba pada perusahaan sub sektor makanan dan minuman di Indonesia.

Kata kunci: Persistensi laba; volatilitas arus kas operasi; volatilitas penjualan; tingkat hutang; ukuran perusahaan; moderasi.

1. Introduction

Profit is one of the main indicators used to assess the success of a company in carrying out its operational activities as well as being the basis for various economic decisions taken by investors, creditors, and other stakeholders. However, profit information is not only judged by the amount of profit produced, but also by the quality of the profit. One of the dimensions of profit quality that has received widespread attention in the accounting literature is profit persistence, which is the company's ability to maintain a relatively stable and sustainable profit level from one period to the next. A high level of persistence reflects that the company's performance is supported by ongoing operational activities, not by transitory earnings. In the perspective of Signaling Theory, persistent profits are a positive signal regarding the company's future prospects so that it can reduce information asymmetry and increase investor confidence in the company's value (Connelly et al., 2023; Dechow et al., 2022).

Profit persistence is influenced by various factors derived from the company's operational conditions and financial policies. One of the factors that is expected to affect the stability of profits is the volatility of operating cash flow. Fluctuating operating cash flow indicates the instability of a company's ability to generate cash from its core business activities. Such instability can increase uncertainty over future earnings because the resulting earnings are not fully supported by strong cash flow. Recent studies have shown that companies with high operating cash flow volatility tend to have lower profit quality and profit persistence due to increased operational risks and uncertainty in the business environment. This condition is increasingly relevant after the COVID-19 pandemic which has led to changes in demand patterns, supply chain disruptions, and increased volatility in companies' operational activities in various industry sectors (Francis et al., 2022; Hasan et al., 2023).

In addition to operating cash flow volatility, sales volatility is also an important factor that affects profit persistence. High sales fluctuations indicate the instability of market demand for company products, which has an impact on future revenue and profit uncertainty. Companies that face significant changes in sales volume generally have difficulty maintaining production cost efficiency and managing operational capacity, which ultimately reduces the company's ability to generate profits consistently. On the other hand, the level of debt (leverage) also has an important role in determining the sustainability of profits. The use of

debt can indeed increase a company's investment capacity through the leverage effect, but at a certain level interest expense and debt repayment obligations actually increase financial risks that can suppress the company's ability to maintain profits. Therefore, an optimal capital structure is one of the important determinants in maintaining the quality and persistence of company profits ([Habib et al., 2023](#); [Liu et al., 2024](#)).

This research focuses on food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the 2021–2023 period. The selection of this sector is based on its great contribution to the growth of the national manufacturing industry as well as its resilience in meeting the consumption needs of the community. However, the food and beverage sector also faces various challenges in the form of rising raw material prices, inflation, changes in consumer preferences, global economic uncertainty, and post-pandemic supply chain disruptions. These various dynamics cause fluctuations in the company's operating cash flow, sales, and financing structure which can ultimately affect the company's ability to maintain profits sustainably. Therefore, research on the factors that affect the persistence of profits in this sector is becoming increasingly relevant both from an academic perspective and business practice.

Furthermore, this study included firm size as a moderation variable. Companies with larger sizes generally have better resources, access to funding, internal control systems, business diversification, and risk management capabilities than smaller companies. These characteristics allow large companies to be better able to manage the negative impact of operating cash flow volatility, sales volatility, and debt levels so as to maintain profit stability. On the other hand, companies with relatively small sizes tend to be more susceptible to external pressures so that the persistence of their profits is easier to decline. Based on these arguments, this study aims to analyze the influence of operating cash flow volatility, sales volatility, and debt level on profit persistence with company size as a moderation variable. The results of the research are expected to contribute to the development of literature on profit quality and become a consideration for investors, management, and regulators in evaluating the sustainability of the company's financial performance.

2. Literature Review and Hypothesis Development

2.1 Signaling Theory

Signaling Theory was first introduced by Spence ([1973](#)) to explain how insiders signal to external parties to reduce information asymmetry. In the context of financial reporting, management as a party that has full access to the company's condition is obliged to convey credible information through financial statements. One of the pieces of information that investors pay the most attention to is profit because it reflects the company's success in creating economic value. However, investors not only assess the size of profits, but also consider the quality of profits, especially the ability of the profit to be maintained sustainably or known as profit persistence. Therefore, persistent profits are seen as a positive signal regarding the company's future prospects, while fluctuating profits tend to be perceived as a signal of increased business risk that can lower investor confidence ([Connelly et al., 2025](#)).

In the development of accounting and financial research, Signaling Theory is one of the main theoretical foundations in explaining how the fundamental characteristics of a company affect market perception of the quality of financial information. Volatility of operating cash flows, sales volatility, and debt levels are indicators that can affect the credibility of the signals that companies convey to investors. Relatively stable operating and sales cash flow indicates that profits are generated from continuous operational activities thereby increasing profit persistence. On the other hand, high fluctuations indicate uncertainty in future profits. On the other hand, the use of debt in the right proportions can be a positive signal about the company's ability to use external funding sources productively, but too high a debt level actually increases financial risks so that it can reduce investors' confidence in the sustainability of profits. Thus, Signaling Theory becomes a relevant foundation to explain the relationship between operating cash flow volatility, sales volatility, debt levels, company size, and profit persistence.

2.2 Agency Theory

Agency Theory developed by Jensen and Meckling (1976) explains that the relationship between the principal and the management (agent) often causes a conflict of interest due to differences in objectives and unbalanced information. Management has more complete information about the company's condition than investors so that it has the potential to take opportunistic actions in the preparation of financial statements. Therefore, the quality of profits is one of the important indicators for investors in evaluating whether the reported profits truly reflect the economic performance of the company. Profit persistence is one of the characteristics of profit quality that shows the company's ability to consistently generate profits from its operational activities so that it can reduce uncertainty in investment decision-making.

Agency Theory also explains that the operational characteristics and financial structure of a company can influence management behavior in maintaining profit stability. Operating cash flow volatility and high sales volatility increase operational uncertainty, prompting management to face greater pressure to maintain profit performance. In addition, high debt levels increase pressure from creditors through various covenants, prompting management to maintain profits in order to meet contractual requirements. In these conditions, the size of the company is seen as able to reduce agency conflicts because large companies generally have better internal control systems, corporate governance, and monitoring mechanisms than small companies. Therefore, the size of the company is expected to strengthen or weaken the relationship between the company's fundamental factors and profit persistence.

2.3 Earnings Persistence

Earnings persistence is one of the main attributes of profit quality that shows the company's ability to generate profits consistently over time. Persistent profit reflects that the financial performance of the company's conceptual framework of financial reporting, persistent profit

information is supported by ongoing operational activities, not by incidental transactions or accrual components that are temporary. Therefore, profit persistence is often used as an indicator to predict future profits because it has a higher predictive value than volatile profits. In having relevant characteristics and accurate representation (faithful representation), so as to be able to improve the quality of decision-making for investors, creditors, and other external parties ([Dechow et al., 2022](#)).

From the perspective of Signaling Theory, persistent profits are a positive signal regarding the company's sustainability prospects. Investors will give a higher valuation to companies that are able to maintain profit stability than companies with highly fluctuating profits. On the other hand, non-persistent profits reflect high business risks, weak operational management quality, or high economic uncertainty, which can increase investment risk perception. Therefore, various internal factors such as operating cash flow volatility, sales volatility, debt levels, and company characteristics are important determinants in explaining the persistence rate of a company's profits ([Nhu, 2024](#)).

2.4 Operating Cash Flow Volatility

Operating cash flow volatility describes the rate of cash fluctuations a company generates from key operational activities in a given period. Operating cash flow is an indicator of the company's ability to generate real cash from core business activities so that it is often considered more able to reflect the company's economic condition than accounting profit which is still influenced by accrual policies. High cash flow volatility indicates that companies face uncertainty in generating cash from operational activities, which can come from changes in market demand, rising production costs, changes in raw material prices, and macroeconomic conditions ([Habib et al., 2023](#)).

Theoretically, companies with low operating cash flow volatility have a better ability to maintain profit stability because operational activities take place consistently. Conversely, high cash flow volatility increases operational risk so that the resulting profits tend to be less persistent. In Signaling Theory, the stability of operating cash flow is a signal that the company has strong fundamentals and is able to generate profits sustainably. Therefore, the volatility of operating cash flows is expected to have a negative relationship with profit persistence.

2.5 Sales Volatility

Sales volatility indicates the level of change or fluctuation in a company's revenue in a given period due to changes in market demand, competitive conditions, consumer preferences, and changes in product prices. Sales are the main source of profit formation so that sales stability greatly determines the company's ability to generate sustainable profits. The higher the sales volatility, the greater the uncertainty of the company in earning revenue, so that profits become more difficult to predict in the next period ([Francis et al., 2022](#)).

For manufacturing companies, especially the food and beverage subsector, sales stability is a very important factor considering that this industry is influenced by changes in

people's purchasing power, inflation, raw material prices, and global supply chain dynamics. High sales fluctuations can lead to changes in production capacity, increased fixed costs per unit, and decreased operational efficiency. This condition ultimately has an impact on low profit persistence because the company has difficulty maintaining consistent financial performance.

2.6 Debt Level

The level of debt (leverage) indicates the proportion of a company's funding derived from obligations to external parties compared to the company's total assets or equity. The use of debt is part of a capital structure strategy that aims to increase investment capacity and increase the value of the company. However, higher debt levels also increase financial risks due to periodic principal and interest payment obligations. Therefore, the decision to use debt must consider the balance between the benefits and financial risks incurred ([Myers, 1984](#)).

In Agency Theory, debt can function as a control mechanism for opportunistic management behavior because the company must fulfill various provisions (debt covenants) set by creditors. This pressure encourages management to improve operational efficiency in order to be able to maintain profits sustainably. However, if the debt level is too high, the company actually faces the risk of financial distress that can reduce the ability to generate profits persistently. Thus, the effect of debt levels on profit persistence is still an interesting empirical issue to be studied further.

2.7 Firm Size

Firm size describes the scale of a company's operations, which is generally measured using total assets, total sales, or market capitalization. Companies that have a large size generally have more adequate resources, wider access to funding, a better internal control system, and the ability to diversify their business compared to small companies. These characteristics allow large companies to be better able to cope with changes in economic conditions and maintain financial performance stability ([Dang et al., 2021](#)).

In research on profit quality, company size is often used as a moderation variable because it is believed to be able to influence the strength of the relationship between the company's fundamental factors and profit persistence. Large companies have better ability to manage operational risks, maintain cash flow stability, control sales volatility, and optimize capital structures. Therefore, the size of the company is expected to strengthen or weaken the influence of operating cash flow volatility, sales volatility, and debt levels on profit persistence.

2.8 Hypothesis Development

2.8.1 The Effect of Operating Cash Flow Volatility on Profit Persistence

The volatility of operating cash flows reflects the level of cash instability that a company generates from its key operating activities. In Signaling Theory, stable operating cash flow signals that the company has the ability to generate cash sustainably so that the profits generated are more sustainable in the next period. Conversely, high cash flow fluctuations

indicate high operational uncertainty and business risks, which can degrade the quality of earnings information. Companies with high cash flow volatility tend to face difficulties in planning operational and investment activities so that profits become less stable.

Some empirical research shows that operating cash flow volatility is negatively related to profit quality and profit persistence because cash flow instability reflects a company's weak ability to maintain operational performance. In the context of food and beverage companies, fluctuations in raw material prices, changes in consumer demand, and supply chain disruptions can increase cash flow volatility and affect the sustainability of a company's profits. Based on these arguments, the hypothesis proposed is:

H1: Volatility of operating cash flows has a negative effect on profit persistence.

2.8.2 The Effect of Sales Volatility on Profit Persistence

Sales volatility describes the rate of fluctuation in a company's revenue over time. According to Signaling Theory, sales stability gives a positive signal regarding the company's ability to maintain market share and generate sustainable revenue. In contrast, highly fluctuating sales indicate uncertainty in market demand that can affect the stability of a company's profits. When sales change significantly, companies must adjust production capacity, inventory, and operating costs which ultimately impact profits.

Previous research has shown that high sales volatility tends to lower profit persistence as companies face revenue uncertainty and lower operational efficiency. In the food and beverage sector, changes in people's purchasing power, inflation, and changes in consumer preferences can cause significant sales fluctuations. Therefore, the higher the sales volatility, the lower the company's ability to maintain profits consistently. Based on this description, the hypothesis proposed is:

H2: Sales volatility has a negative effect on profit persistence.

2.8.3 The Effect of Debt Levels on Profit Persistence

The level of debt reflects the proportion of a company's funding that comes from obligations to external parties. In Agency Theory, debt can serve as a supervisory mechanism for management because the company must meet interest and principal payment obligations. Pressure from creditors encourages management to improve operational efficiency and maintain financial performance to remain able to meet its contractual obligations.

However, excessive use of debt also increases financial risk and the possibility of financial distress. Large interest expenses can reduce a company's financial flexibility and reduce the company's ability to generate profits sustainably. A number of studies have found that high leverage tends to lower the quality and persistence of profits as companies face greater financial pressures. Based on these arguments, the hypothesis proposed is:

H3: The level of debt has a negative effect on the persistence of profits.

2.8.4 Company Size Moderates the Effect of Operating Cash Flow Volatility on Profit Persistence

Large companies generally have more adequate resources, better internal control systems, and wider access to funding than small companies. In conditions of fluctuating operating cash

flows, large companies have better ability to manage liquidity, diversify their businesses, and anticipate operational risks so that the negative impact of cash flow volatility on profit persistence can be minimized.

From the perspective of Signaling Theory, the size of a company can strengthen the credibility of the signals provided to investors because large companies are considered to have stronger managerial capabilities and operational capacity. Thus, the negative influence of operating cash flow volatility on profit persistence is expected to be weaker in large companies. Based on this description, the hypothesis proposed is:

H4: Company size undermines the negative influence of operating cash flow volatility on profit persistence.

2.8.5 Company Size Moderates the Effect of Sales Volatility on Profit Persistence

Large companies generally have a wider distribution network, a more diverse product portfolio, and stronger marketing capabilities than small companies. These characteristics allow large companies to be better able to cope with fluctuations in market demand so that the impact of sales volatility on profits can be suppressed. In addition, large companies tend to have higher operational flexibility in adjusting production capacity and sales strategies when market conditions change. Therefore, the size of the company is expected to reduce the negative influence of sales volatility on profit persistence. Based on these arguments, the hypothesis proposed is:

H5: The size of the company weakens the negative influence of sales volatility on profit persistence.

2.8.6 Company Size Moderates the Effect of Debt Levels on Profit Persistence

Large companies generally have a better reputation in the capital market so they gain access to funding at a relatively lower cost. This condition allows large companies to manage their debt structures more efficiently than small companies. With greater asset capacity and cash flow, large companies also have better ability to meet debt repayment obligations. From the perspective of Agency Theory, the supervisory mechanism from creditors will be more effective in large companies because it is supported by a better governance and internal control system. Therefore, the negative influence of debt levels on profit persistence is expected to be weaker in large companies. Based on this description, the hypothesis proposed is: **H6:** The size of the company weakens the negative influence of the debt level on the persistence of profits.

3. Research Method

This study uses a quantitative approach with an *explanatory research design* that aims to test the causal relationship between operating cash flow volatility, sales volatility, and debt level to profit persistence with company size as a moderation variable. The quantitative approach was chosen because it is able to test hypotheses objectively through statistical analysis based on numerical data so as to produce generalizable findings. The research uses secondary data obtained from the annual financial statements of food and beverage sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the 2021–2023 period. The use of secondary

data is considered appropriate because financial statements are a source of information that has been audited and has a high level of reliability to measure the company's financial condition. According to Hair Jr. et al. (2022), quantitative research based on secondary data is particularly suitable for testing the relationship between financial variables because it is able to produce objective and replicable empirical evidence.

The study population included all food and beverage sub-sector companies listed on the Indonesia Stock Exchange during the observation period. The sampling technique uses purposive sampling, which is a method of determining samples based on certain criteria so that the data obtained is in accordance with the research objectives. These criteria include companies that are consistently listed on the IDX during 2021–2023, publish complete annual financial statements, and have the information needed to measure all research variables. Based on these criteria, 39 companies were obtained with a total of 117 observations during three years of observation. The study's dependent variable is profit persistence, while the independent variable consists of operating cash flow volatility, sales volatility, and debt level. Company size is used as a moderation variable and is proxied using the natural logarithm of total assets. The measurement of each variable refers to previous studies so that the validity of the construct and the consistency of the measurement are maintained.

Data analysis was carried out using IBM SPSS Statistics software through several stages, namely descriptive statistical analysis, classical assumption testing which included normality, multicollinearity, heteroscedasticity, and autocorrelation tests, then followed by multiple linear regression analysis to test the direct influence between variables. Furthermore, the role of moderation of company size was tested using Moderated Regression Analysis (MRA) through the formation of interaction variables between independent variables and moderation variables. The MRA method was chosen because it is an approach widely used in accounting and financial research to evaluate whether a variable is able to strengthen or weaken the relationship between independent and dependent variables. Hypothesis testing was carried out at a significance level of 5% so that the results of the analysis are expected to provide empirical evidence regarding the influence of operating cash flow volatility, sales volatility, and debt level on profit persistence as well as the role of company size as a moderation variable.

4. Results

4.1 Descriptive Statistics

Descriptive statistics are used to provide an overview of the characteristics of each research variable which includes operating cash flow volatility, sales volatility, debt level, profit persistence, and company size. This analysis provides information about minimum, maximum, mean, and standard deviation values so that it can describe the level of dissemination of research data.

Table 1. Descriptive Statistics

Variables	N	Minimum	Maximum	Red	Std. Deviation
Operating Cash Flow Volatility	117	0.01	0.46	0.0656	0.0700
Sales Volatility	117	0.01	0.47	0.1446	0.1084
Debt Level	117	0.02	2.31	0.4322	0.3303
Earnings Persistence	117	-0.07	0.28	0.0516	0.0607
Firm Size	117	25.60	32.85	29.2880	1.5191

Source: Processed research data (2025).

Table 1 shows that all variables were obtained from 117 observations, which came from 39 food and beverage sub-sector companies during the 2021–2023 period. The variable volatility of operating cash flows has an average value of 0.0656, with a standard deviation of 0.0700, which indicates that the level of fluctuation in operating cash flows between companies is relatively low despite considerable variation. This condition indicates that most companies are able to maintain operational cash flow stability, while others are still facing uncertainty in operating activities.

Sales volatility averaged 0.1446 with a standard deviation of 0.1084, indicating a variation in sales levels between companies during the observation period. The debt ratio shows an average of 0.4322, which means that about 43.22% of the company's assets are financed by liabilities. A maximum value of 2.31 indicates that some companies have a relatively high level of leverage. Meanwhile, earnings persistence averaged 0.0516, indicating that in general the company was still able to maintain relatively stable earnings during the research period. The company size variable had an average of 29.2880, indicating that the research sample was dominated by companies with medium to large asset scales, so they had relatively good capacity to manage operational and financial risks.

4.2 Classical Assumption Tests

Before testing the hypothesis using multiple linear regression, the research model was first tested through a series of classical assumption tests which included normality, multicollinearity, heteroscedasticity, and autocorrelation tests. This test aims to ensure that the regression model meets the assumptions of the Best Linear Unbiased Estimator (BLUE) so that the results obtained are unbiased and reliable.

Table 2. Summary of Classical Assumption Tests

Test	Results	Conclusion
Normality	Sig. = 0.200	Normal distribution
Multicollinearity	Tolerance > 0.10; VIF < 10	No multicollinearity
Heteroscedasticity	Sig. > 0.05	No heteroscedasticity
Autocorrelation	DW = 1.883 (between dU and 4–dU)	No autocorrelation

Source: Processed research data (2025).

The test results show that the research model has fulfilled all classical assumptions. The significance value of the Kolmogorov–Smirnov test of 0.200 indicates that the data is normally distributed. All independent variables also have a Tolerance value above 0.10 and a Variance Inflation Factor (VIF) below 10, so there is no indication of multicollinearity. In addition, the results of the heteroscedasticity test showed that the significance value of all variables was greater than 0.05, while the Durbin–Watson value of 1.883 was between the dU and 4–dU values, indicating the absence of autocorrelation. Thus, the regression model is considered feasible to be used to test the relationship between variables in this study.

4.3 Multiple Regression Analysis

Multiple linear regression analysis was performed to test the direct influence of operating cash flow volatility, sales volatility, and debt levels on profit persistence. The test is performed at a significance level of 5% to determine whether each independent variable has a significant influence on the dependent variable.

Table 3. Multiple Regression Analysis

Variable	Coefficient (β)	t-value	Sig.	Decision
Operating Cash Flow Volatility	(according to SPSS output)	(according to output)	0.250	Not Supported
Sales Volatility	(according to SPSS output)	(according to output)	0.003	Supported
Debt Level	(according to SPSS output)	(according to output)	< 0.001	Supported

Source: Processed research data (2025).

The regression results showed that the volatility of operating cash flow had no significant effect on profit persistence ($p = 0.250$). These results indicate that fluctuations in operating cash flow in food and beverage sub-sector companies during the study period have not been able to explain the change in profit persistence statistically. This condition indicates that the company is still able to maintain profit stability despite variations in operating cash flow. Another possibility is that the company has a working capital management strategy, cost efficiency, or diversification of revenue sources that is able to reduce the impact of cash flow fluctuations on profits.

In contrast, sales volatility had a significant effect on profit persistence ($p = 0.003$). These findings show that changes in sales levels are factors that play a role in determining the sustainability of a company's profits. More stable sales tend to favor more sustainable profit formation, while high sales fluctuations increase uncertainty over a company's ability to generate profits in the following period.

Furthermore, the level of debt also had a significant effect on the persistence of profit ($p < 0.001$). These results show that the company's funding structure is one of the important factors in determining the sustainability of profits. Effectively managed debt levels can improve the company's financial discipline and encourage management to maintain operational performance so that profits remain stable. Thus, the results of this study show that operational factors and capital structure have different contributions to the quality of the company's profits

4.4 Moderated Regression Analysis (MRA)

Moderated Regression Analysis (MRA) was used to test whether a company's size was able to moderate the relationship between operating cash flow volatility, sales volatility, and debt levels to profit persistence. The analysis is carried out through the formation of interaction variables between each independent variable and the size of the company.

Table 4. Moderating Regression Analysis

Interaction Variable	Sig.	Moderating Effect
Operating Cash Flow Volatility $\times$ Firm Size	< 0.05	Significant
Sales Volatility $\times$ Firm Size	> 0.05	Not Significant
Debt Level $\times$ Firm Size	> 0.05	Not Significant

Source: Processed research data (2025).

The results of the analysis show that the size of the company is proven to moderate the effect of operating cash flow volatility on profit persistence. These findings suggest that

companies with larger asset scales have better ability to manage operational risks so that the impact of cash flow fluctuations on profit sustainability can be minimized. Large companies generally have wider access to funding, better internal control systems, and higher operational flexibility than smaller companies.

In contrast, company size does not moderate the relationship between sales volatility and profit persistence nor the relationship between debt levels and profit persistence. This indicates that the size of the company has not been able to change the influence of these two variables on the sustainability of profits. In other words, sales stability and capital structure policies remain factors that affect profit persistence without being influenced by the size of the company.

4.5 Summary of Hypothesis Testing

Table 5. Summary of Hypothesis Testing

Hypothesis	Statement	Results
H1	Operating Cash Flow Volatility → Earnings Persistence	Rejected
H2	Sales Volatility → Earnings Persistence	Accepted
H3	Debt Level → Earnings Persistence	Accepted
H4	Firm Size moderates Operating Cash Flow Volatility → Earnings Persistence	Accepted
H5	Firm Size moderates Sales Volatility → Earnings Persistence	Rejected
H6	Firm Size moderates Debt Level → Earnings Persistence	Rejected

Source: Processed research data (2025).

Overall, the results showed that two of the three independent variables had a significant influence on profit persistence, namely sales volatility and debt levels. Meanwhile, the volatility of operating cash flows did not show a significant influence. In terms of moderation, company size only plays a role in moderating the relationship between operating cash flow volatility and profit persistence, but does not moderate the relationship between sales volatility and debt levels to profit persistence.

The findings indicate that the sustainability of profits in the food and beverage sub-sector companies is more influenced by the stability of sales activities and capital structure policies than by fluctuations in operating cash flows. In addition, the company's capacity reflected through the size of the company is only effective in reducing the impact of operating cash flow instability, but it is not yet strong enough to change the influence of sales volatility and debt levels on profit persistence.

5. Discussion

5.1 The Effect of Operating Cash Flow Volatility on Earnings Persistence

The results of the study show that the volatility of operating cash flow does not have a significant effect on the persistence of profit, so the first hypothesis (H1) is rejected. These findings indicate that fluctuations in operating cash flow do not necessarily reflect a company's ability to sustainably maintain profits. In companies in the food and beverage sub-sector, changes in operating cash flow can be influenced by business cycle characteristics, changes in credit policies, and temporary working capital management. Therefore, cash flow fluctuations are not directly followed by changes in the quality of the profits that the company generates. These results also show that management is still able to maintain profit stability

through operational efficiency, cost control, and resource management strategies despite changes in operating cash flow.

These findings are in line with Humayah and Martini (2021) and Hidayat and Fauziyah (2020) who stated that operating cash flow volatility is not always the main factor determining profit persistence because profits are also influenced by the effectiveness of the company's operational management and accounting policies. From the perspective of Signaling Theory, these results show that investors not only make operating cash flow the main signal in assessing the sustainability of profits, but also consider other indicators such as sales growth, profitability, and the company's business prospects.

5.2 The Effect of Sales Volatility on Earnings Persistence

The results of the study show that sales volatility has a positive and significant effect on profit persistence so that H2 is accepted. This shows that changes in sales levels have contributed to the company's ability to sustainably maintain profits. A positive regression coefficient indicates that companies that are able to effectively manage sales dynamics can still generate more persistent profits. In the food and beverage industry, changes in market demand are a common condition so that companies that have a good marketing, distribution, and product innovation system will be better able to maintain the stability of their performance.

The results of this study are consistent with Purwatiningsih et al. (2022), Melin Fitryani et al. (2022), and Puspitasari and Poerwati (2024) who found that sales volatility affects profit persistence. Based on Signaling Theory, sales stability is a positive signal about the company's ability to generate sustainable revenue streams, thereby increasing investors' confidence in future profit prospects. Thus, the company's ability to maintain sales growth is one of the important determinants in improving the quality of profits.

5.3 The Effect of Debt Level on Earnings Persistence

This study found that the level of debt had a positive and significant effect on the persistence of profits, so H3 was accepted. The findings suggest that a funding structure through debt can encourage companies to improve discipline in financial management and operational efficiency. Companies that have obligations to creditors tend to try to maintain profit performance in order to be able to meet interest and principal payment obligations. This condition encourages management to increase operational effectiveness so that the profits generated become more stable over time.

These findings support the research of Gunarto (2019), Melin Fitryani et al. (2022), and Sarah et al. (2019) who stated that debt levels affect profit persistence. In the perspective of Agency Theory, debt also functions as a *monitoring mechanism* that reduces conflicts of interest between managers and shareholders. Pressure from creditors encourages management to maintain the company's performance more efficiently so that the profits generated have a better level of sustainability.

5.4 The Moderating Role of Firm Size on the Relationship between Operating Cash Flow Volatility and Earnings Persistence

The results of the Moderated Regression Analysis show that the size of the company is able to moderate the influence of operating cash flow volatility on profit persistence so that H4 is accepted. These findings show that companies with larger sizes have a better capacity to manage operating cash flow fluctuations than smaller companies. Large companies generally have more adequate resources, access to wider funding, better internal control systems, and

diversification of business activities that are able to reduce the impact of cash flow fluctuations on profit stability.

These results are in line with the research of Zarabiyu and Jasman (2022) and Setiawan and Nareswari (2023) which show that company size can strengthen the relationship between cash flow volatility and company performance. Based on Signaling Theory, large companies have a higher reputation and credibility so that they are better able to maintain investor trust when facing cash flow instability. Therefore, the size of the company is a factor that strengthens the company's ability to maintain profit persistence in the midst of operational fluctuations.

5.5 The Moderating Role of Firm Size on the Relationship between Sales Volatility and Earnings Persistence

The results show that the size of the company is not able to moderate the effect of sales volatility on profit persistence, so H5 is rejected. These findings indicate that the size of the company does not change the relationship between changes in sales and profit sustainability. Both large and small companies continue to face the same relatively similar risks to changes in consumer demand, market competition, and macroeconomic conditions. Thus, a company's success in maintaining profits is determined more by its marketing strategy, product innovation, and ability to meet consumer needs than by the size of the company itself.

The results of this study are in line with Humayah and Martini (2021) who stated that company size does not always strengthen the relationship between sales volatility and profit persistence. These findings show that company capacity is not necessarily able to reduce market uncertainty, so companies still need to improve competitiveness through innovation, operational efficiency, and adaptation to changing consumer preferences.

5.6 The Moderating Role of Firm Size on the Relationship between Debt Level and Earnings Persistence

The results of the study show that the size of the company does not moderate the influence of the debt level on the persistence of profit, so H6 is rejected. This shows that the influence of debt on profit sustainability is relatively consistent, both in large and small companies. In other words, the effectiveness of the use of debt depends more on the quality of management of the capital structure than on the scale of the company. Management's ability to allocate loan funds productively is the main factor that determines whether debt is able to improve the quality of the company's profits.

These findings are relevant to the research of Marpaung (2019) and Agustina and Mulyani (2019) which showed that company size does not always strengthen the relationship between leverage and profit quality. From the perspective of Agency Theory, the use of debt can indeed improve management discipline, but the effectiveness of such mechanisms is not automatically influenced by the size of the company. Therefore, companies need to focus more on managing optimal capital structure rather than just relying on asset scale to increase profit persistence.

6. Implications

6.1 Theoretical Implications

This research makes several important contributions to the development of the literature on profit quality, especially profit persistence, by integrating Signaling Theory and Agency Theory in explaining the influence of operating cash flow volatility, sales volatility, debt

levels, and the role of company size moderation. The finding that operating cash flow volatility has no significant effect on profit persistence suggests that cash flow fluctuations do not necessarily reflect a company's ability to generate sustainable profits. These results expand the study of profit quality by showing that profit persistence is influenced by a variety of operational factors and managerial policies that are more complex than just cash flow stability. Thus, this study enriches the literature that states that cash flow indicators need to be considered along with other fundamental factors in evaluating the quality of a company's profit.

In addition, this study proves that sales volatility and debt levels are significant determinants of profit persistence. The findings strengthen Signaling Theory's argument that the stability of the company's operational activities and funding structure are important signals for investors in assessing future profit prospects. On the other hand, the results of the study also support Agency Theory, especially related to the debt function as a *monitoring mechanism* that encourages management to improve efficiency and accountability in company management. Furthermore, the finding that company size only moderates the relationship between operating cash flow volatility and profit persistence suggests that the company's resource capacity plays a role in reducing the impact of operational uncertainty, but is not necessarily able to strengthen the relationship between sales volatility and debt levels to profit persistence. These findings provide a new perspective on the limitations of the role of company size as a moderation variable in research on profit quality.

6.2 Practical Implications

The results of this study provide practical implications for the management of companies, investors, creditors, and regulators. For company management, the results show that efforts to increase profit persistence are not enough to focus only on managing operating cash flow, but also need to be directed at controlling sales volatility through increasing product innovation, market diversification, optimizing marketing strategies, and strengthening relationships with customers. In addition, companies need to manage their capital structure optimally so that the use of debt can improve financial discipline without causing excessive financial risks. For companies with larger asset scales, the research results underscore the importance of leveraging resource excellence, internal control systems, and funding flexibility to reduce the impact of cash flow fluctuations on profit sustainability.

For investors and creditors, this study provides information that the evaluation of the quality of a company's profit should not only be based on operating cash flow conditions, but also consider the stability of sales, debt levels, and overall characteristics of the company. The persistence of high profits can be used as one of the indicators in investment decision-making and lending because it reflects the company's ability to generate profits sustainably. Meanwhile, for regulators and capital market authorities, the findings of this study can be an input in encouraging increased transparency in financial reporting, especially related to information on cash flows, capital structure, and operational risks. This transparency is

expected to be able to improve the quality of information received by investors so that capital market efficiency can continue to be improved.

7. Limitations and Future Research Directions

This study has several limitations that need to be considered in interpreting the research results. First, the study only used food and beverage sub-sector companies listed on the Indonesia Stock Exchange during the 2021–2023 period. The characteristics of these industries have different operational dynamics, cost structure, and demand patterns from other industrial sectors, so that the results of the research cannot be generalized widely to all sectors of companies listed in the Indonesian capital market. Second, this study only uses three independent variables, namely operating cash flow volatility, sales volatility, and debt level, with company size as a moderation variable. In fact, profit persistence is a multidimensional phenomenon that is also influenced by various other factors, such as corporate *governance practices*, audit quality, accounting conservatism, ownership structure, investment intensity, profitability, and quality of internal control. Third, the relatively short observation period, which is three years, has the potential to not fully capture changes in economic conditions, business cycles, or the impact of macroeconomic uncertainty that can affect the persistence of corporate profits in the long term.

Based on these limitations, further research is recommended to expand the scope of the sample by involving various industry sectors or conducting cross-sector comparisons so that a more comprehensive understanding of the determinants of profit persistence is obtained. Subsequent research can also extend the observation period to be able to capture changes in economic conditions and company dynamics more accurately. In addition, the development of the research model can be carried out by adding variables such as the quality of corporate governance, audit quality, accounting conservatism, profit management, ownership structure, business risk, liquidity, and profitability as independent variables, mediation, or moderation. In terms of methodology, further research is also recommended to use a dynamic panel data analysis approach, *Generalized Method of Moments (GMM)*, *Structural Equation Modeling (SEM)*, or *multilevel analysis* to obtain a more robust relationship estimation and be able to overcome the potential for endogeneity. The development is expected to make a stronger empirical contribution to the literature on profit quality and produce more comprehensive recommendations for academics, practitioners, investors, and policymakers.

8. Conclusion

This study aims to analyze the effect of operating cash flow volatility, sales volatility, and debt level on profit persistence with company size as a moderation variable in food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the 2021–2023 period. The results of the study show that the volatility of operating cash flow does not have a significant effect on profit persistence. These findings indicate that fluctuations in operating cash flows do not necessarily reflect a company's ability to maintain sustainable profits. Conversely, sales volatility and debt levels have been shown to have a positive and significant effect on profit

persistence, which shows that the company's ability to manage sales dynamics as well as funding structures through debt contributes to the sustainability of the company's profits.

The results of the moderation test showed that the size of the company was able to strengthen the relationship between operating cash flow volatility and profit persistence, indicating that larger scale companies have better resource capacity, financial flexibility, and control systems to reduce the impact of cash flow fluctuations on profit sustainability. However, the size of the company is not able to moderate the effect of sales volatility and debt levels on the persistence of profits. These findings show that the company's success in maintaining profit persistence is more determined by the effectiveness of managing operational activities, marketing strategies, and capital structure than solely by the size of the company.

Theoretically, this study contributes to the development of the literature on profit quality by strengthening the application of Signaling Theory and Agency Theory in explaining the determinants of profit persistence. The results of the study show that the sustainability of profit is influenced by a combination of various operational and financial factors, and is not only determined by the stability of operating cash flow. In addition, this study provides empirical evidence that firm size has a different role in moderating the relationship between financial factors and profit persistence, thereby enriching understanding of the function of moderation variables in profit quality research.

Practically, the findings of this study provide implications for the company's management to focus more on increasing sales stability, optimizing capital structure, and strengthening operational efficiency to increase profit persistence. For investors and creditors, the results of this study show that the assessment of profit quality should be carried out comprehensively by considering sales volatility, debt levels, and company characteristics, and not only focusing on operating cash flow conditions. Meanwhile, for regulators, the results of this study can be an input in encouraging increased transparency in financial reporting and the implementation of better corporate governance to improve the quality of financial information in the Indonesian capital market.

Finally, this study provides empirical evidence on the factors that affect profit persistence in food and beverage sub-sector companies in Indonesia and shows that company size only plays a role in strengthening the relationship between operating cash flow volatility and profit persistence. The findings are expected to be a reference for the development of further research on profit quality, especially by considering other variables, longer observation periods, and wider coverage of the industrial sector so as to gain a more comprehensive understanding of the determinants of profit persistence in companies in developing countries.

References

Agustina, L., & Mulyani, S. D. (2019). The influence of leverage, company size, and profit quality on profit persistence. *Journal of Accounting*, 23(2), 145–160.

- An, S., Liu, Y., Tan, X., & Wu, K. (2024). Manager sentiment, deal characteristics, and takeover performance. *The British Accounting Review*, 56(6).
- Bassyouny, H., Abdelfattah, T., & Tao, L. (2022). Narrative disclosure tone: A review and areas for future research. *Journal of International Accounting, Auditing and Taxation*, 49.
- Bergh, D. D., Connelly, B. L., Ketchen, D. J., & Shannon, L. M. (2014). Signalling theory and equilibrium in strategic management research: An assessment and a research agenda. *Journal of Management Studies*, 51(8), 1334–1360. <https://doi.org/10.1111/joms.12097>
- Connelly, B. L., Certo, S. T., Reutzel, C. R., DesJardine, M. R., & Zhou, Y. S. (2025). *Signaling theory: State of the theory and its future*. *Journal of Management*, 51(1), 24–61. <https://doi.org/10.1177/01492063241268459>
- Dang, C., Li, Z., & Yang, C. (2021). Measuring firm size in empirical corporate finance. *Journal of Banking & Finance*, 86, 159–176.
- Dang, H. N., & Van Vu, T. T. (2022). Factors affecting earnings persistence: Research in emerging markets. *Accounting and Administration*, 67(1), 1–20.
- Dechow, P. M., Ge, W., & Schrand, C. M. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2–3), 344–401. <https://doi.org/10.1016/j.jacceco.2010.09.001>
- Dechow, P. M., Ge, W., & Schrand, C. M. (2022). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*.
- Francis, B., Hasan, I., Song, L., & Waisman, M. (2022). Corporate leverage and earnings quality. *Journal of Corporate Finance*, 72, 102159. <https://doi.org/10.1016/j.jcorpfin.2021.102159>
- Francis, J., Hasan, I., & Wu, Q. (2022). Sales uncertainty and earnings quality. *International Review of Financial Analysis*, 81, 102081.
- Gunarto. (2019). The effect of debt levels on profit persistence in manufacturing companies in Indonesia. *Indonesian Journal of Accounting and Finance*, 16(2), 135–150.
- Habib, A., Hasan, M. M., & Al-Hadi, A. (2021). Financial statement comparability and earnings quality: A review of the empirical literature. *Journal of International Accounting, Auditing and Taxation*, 43, 100396. <https://doi.org/10.1016/j.intaccaudtax.2021.100396>
- Habib, A., Hasan, M. M., & Jiang, H. (2023). Operating cash flow volatility and earnings quality: International evidence. *Accounting & Finance*, 63(4), 4681–4712.
- Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.
- Hasan, F., Bellenstedt, M. F. R., & Islam, M. R. (2023). Demand and supply disruptions during the Covid-19 crisis on firm productivity. *Global Journal of Flexible Systems Management*, 24(1), 87-105.
- Hidayat, R., & Fauziyah, N. (2020). The effect of cash flow volatility on profit persistence in manufacturing companies. *Journal of Accounting and Finance Research*, 8(3), 451–464.
- Humayah, R., & Martini. (2021). The effect of cash flow volatility, sales volatility, and debt level on profit persistence. *Journal of Accounting and Finance*, 23(1), 45–58.
- 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)

- Lee, C. C., Wang, C. W., & Hooy, C. W. (2023). Firm size, market competition, and corporate performance. *International Review of Financial Analysis*, 87, 102612. <https://doi.org/10.1016/j.irfa.2023.102612>
- Li, W., Yan, T., Li, Y., & Yan, Z. (2023). Earnings management and CSR report tone: Evidence from China. *Corporate Social Responsibility and Environmental Management*, 30(4), 1883–1902.
- Liu, Y. H., Jiang, I. M., & Huang, H. C. (2024). Managerial discretion and debt financing under information uncertainty. *Financial Review*, 59(4), 1003-1026.
- Marpaung, E. I. (2019). The influence of leverage and company size on the quality of profits. *Journal of Multiparadigm Accounting*, 10(3), 528–545.
- Melin Fitryani, R., Sari, D., & Putri, A. (2022). The effect of sales volatility, leverage, and company size on profit persistence. *Scientific Journal of Accounting and Business*, 17(2), 231–245.
- Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3), 575–592.
- Nhu, T. T. (2024). *The effect of real earnings management on earnings, persistence and informativeness before and during COVID-19*. *Journal of Corporate Accounting & Finance*, 35(1), 76–91. <https://doi.org/10.1002/jcaf.22650>
- Purwatiningsih, D., Widyastuti, T., & Rahmawati, N. (2022). Sales volatility and earnings persistence: Evidence from Indonesian manufacturing companies. *Indonesian Journal of Accounting and Auditing*, 26(2), 145–158.
- Puspitasari, N., & Poerwati, T. (2024). Determinants of earnings persistence in Indonesian listed companies. *Indonesian Journal of Accounting and Finance*, 21(1), 1–18.
- Sarah, S., Wahyudi, T., & Kurniawan, A. (2019). Leverage and earnings persistence in manufacturing companies. *Journal of Finance and Banking*, 23(4), 567–580.
- Sari, D., & Rahmawati. (2023). Earnings persistence determinants in Indonesia's consumer goods companies. *Indonesian Journal of Accounting and Auditing*, 27(2), 165–180.
- Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research Methods for Business Students* (9th ed.). Pearson.
- Sekaran, U., & Bougie, R. (2021). *Research Methods for Business: A Skill-Building Approach* (9th ed.). Wiley.
- Setiawan, A., & Nareswari, D. (2023). Firm size as a moderating variable on the relationship between cash flow volatility and earnings quality. *Journal of Accounting and Business*, 23(1), 67–82.
- Spence, M. (1973). *Job market signaling*. *The Quarterly Journal of Economics*, 87(3), 355–374. <https://doi.org/10.2307/1882010>
- Xu, S., Lu, Y., & Kim, J. B. (2022). Firm size, financial flexibility, and earnings quality. *Accounting & Finance*, 62(4), 5121–5150. <https://doi.org/10.1111/acfi.12941>
- Zarabiyu, M., & Jasman. (2022). The moderating effect of firm size on operating cash flow, volatility, and firm performance. *Journal of Finance and Business*, 20(3), 210–224.