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Beyond Market Return: Determinants of Jensen's Alpha in Indonesian F&B Firms

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Abstract

The Objectives- This study examines whether Indonesian food and beverage (F&B) firms generated returns above those implied by market risk during 2021–2025, and investigates whether profitability, leverage, inflation, and the policy interest rate help explain risk-adjusted performance as measured by Jensen's Alpha.
The Methods/approaches– Annual Jensen's Alpha was calculated for six F&B issuers listed on the Indonesia Stock Exchange (30 firm-year observations, 2021–2025) and regressed on return on assets, the debt-to-equity ratio, inflation, and the Bank Indonesia 7-Day Reverse Repo Rate, controlling for firm size, using a preliminary pooled OLS model ahead of a full panel-data estimation.
The Results– Average Jensen's Alpha across the sample was 6.82 percent, with only 2022 recording a positive industry-wide alpha. The pooled model explained little of the variation (R^2 = 0.231) and none of the five predictors was statistically significant, while variance inflation factors indicated severe multicollinearity.
The Research Implications – The findings suggest F&B stocks did not consistently outperform risk-adjusted benchmarks, challenging the assumption of intrinsic defensive alpha in the sector. A panel-data strategy with fixed- and random-effects estimation is outlined to refine these estimates and support more cautious, risk-adjusted evaluation of consumer-staples equities.

Keywords: Jensen's Alpha; Risk-Adjusted Performance; Food and Beverage Industry; Inflation; Interest Rate

1. Introduction

Traditional performance measures focus on raw stock returns, but this can mislead when trying to identify truly superior investment performance. Jensen's Alpha explicitly measures the return in excess of the market reward for a stock's systematic risk (Rinarta & Rochmatullah, 2026). A positive alpha implies that realized returns exceeded the CAPM-required return, while a negative alpha indicates underperformance after adjusting for beta risk. This distinction is especially pertinent under volatile macroeconomic conditions, such as the inflationary and interest-rate cycles experienced in Indonesia from 2021 to 2025. Rising inflation erodes real purchasing power and raises input costs, whereas monetary tightening (a higher BI7DRR) increases firms' financing costs and the risk-free yield. Empirical studies in Indonesia's food and beverage sector yield mixed results: Rinarta and Rochmatullah (2026) find that inflation positively affects F&B stock returns while interest rates affect them negatively, whereas Suharyanto and Zaki (2021) report that inflation hurts F&B stock returns and that interest rates have no effect. Comparable ambiguity appears in cross-country evidence: Majok et al. (2024) find that the effects of interest rates, inflation, and exchange rates on stock market performance differ between Indonesia and Japan. Such mixed findings underscore that raw return analysis alone is insufficient; investors ultimately care whether firms "beat the market," not merely post positive returns.

The Indonesian F&B industry is often viewed as defensive, supplying staple goods with stable demand in downturns (Agarwal, 2024). However, resilience in revenues does not guarantee that stock returns beat benchmarks. Individual firms differ in profitability, capital structure, and market risk. For instance, a high ROA suggests efficient asset use, but if markets already price in strong ROA, it may not translate into positive alpha. Literature on Indonesian firms generally finds that ROA (profitability) is positively related to stock prices or returns (Aminah, 2021; Nadyayani et al., 2021; Sukesti et al., 2021), but this need not imply a one-to-one relation with alpha. Likewise, capital structure affects performance: debt provides leverage benefits but also risk. Studies in emerging markets indicate that higher leverage tends to impair market-based performance. Boshnak (2023) finds that across Saudi-listed non-financial firms, increased debt (including the debt-to-equity ratio) significantly lowers operating and market performance, a pattern echoed by Le and Phan's (2017) evidence that leverage ratios are negatively related to firm performance in Vietnam. Uddin and Khan (2024) similarly show that capital structure measures significantly influence Jensen's Alpha in Bangladeshi manufacturing firms. These studies motivate examining whether DER helps or hurts F&B firms' risk-adjusted performance in Indonesia.

Another factor is firm size, since larger firms often enjoy better financing terms, diversification, and market liquidity. Size is a well-known cross-sectional stock-return factor, as in Fama–French models. Subroto and Setyawan (2021) report that among Indonesian LQ45 companies, beta positively predicts returns while firm size has a negative effect and book-to-market is insignificant. For our purposes, size is included as a control to account for scale effects on alpha.

This study combines firm fundamentals (ROA, DER) with macroeconomic variables (inflation, BI7DRR) to explain Jensen's Alpha among Indonesian F&B issuers from 2021 to 2025. It builds on existing work by shifting focus from stock returns to risk-adjusted alpha. Prior Indonesian research has not generally used Jensen's Alpha as the dependent variable. Internationally, value and technical strategies have been shown to earn alpha; for example, Brazilian value-investing strategies have been found to produce significant positive Jensen's Alpha under multifactor tests (Domingues et al., 2022), consistent with earlier sector-level applications of Jensen's Alpha in other emerging Asian markets (Dayaratne et al., 2010). Our contribution is to test analogous hypotheses in Indonesia: does profitability (ROA) or leverage (DER) help firms generate positive alpha when inflation and policy rates shift? In doing so, we address whether F&B stocks truly "beat the market" during economic stress, or whether seemingly stable returns were merely in line with risk expectations.

Hence the research questions: **(1)** Does higher ROA lead to higher Jensen's Alpha? **(2)** Does higher DER affect alpha? **(3)** Does inflation (INF) influence alpha? **(4)** Does Bank Indonesia's 7-Day Reverse Repo Rate (BI7DRR) influence alpha? We hypothesize that higher ROA should facilitate outperformance if profitability exceeds investor expectations, whereas high DER may constrain alpha under monetary tightening. The macro variables capture systematic shifts: inflation could erode or bolster performance depending on firms' pricing power, and a higher BI7DRR generally raises the hurdle rate. By using Jensen's Alpha as the dependent variable, the study isolates abnormal performance net of market moves and risk-free-rate changes.

2. Methodology

2.1 Research Design and Data

This study uses a panel-data approach. The sample comprises all non-financial food and beverage firms listed on the Indonesia Stock Exchange for which data are available across 2021–2025. There are six such firms (DLTA, ICBP, INDF, MYOR, ROTI, and ULTJ) observed over five years, yielding a balanced panel of N = 6, T = 5 (30 observations). Table 1 describes the main variables. Jensen's Alpha for firm *i* in year *t* is computed as shown in Equation 1, where R_{it} is the firm's annual stock return, $R_{m,t}$ is the IHSG index return, $R_{f,t}$ is the risk-free rate (BI7DRR), and β_i is the firm's market beta from an estimation sample (held constant over time in our basic construction). This matches the CAPM definition of Jensen's Alpha applied in recent Indonesian portfolio studies (Wahid et al., 2025). We use BI7DRR as the risk-free rate on the grounds that it is the domestic benchmark policy rate.

$$\alpha_{it} = R_{it} - [R_{f,t} + \beta_i(R_{m,t} - R_{f,t})] \quad (1)$$

Independent variables are: **ROA** (net income divided by total assets, %), capturing profitability; **DER** (debt-to-equity ratio, total liabilities divided by equity), capturing leverage; **Inflation** (annual CPI inflation rate, %); and **BI7DRR** (annual Bank Indonesia 7-Day Reverse Repo Rate, %). We also include **Size** (natural log of total assets) as a control, since larger firms may have different risk/return characteristics. Inflation and BI7DRR vary only by year, not across firms, reflecting common macro conditions each year. Descriptive statistics in Table 1 show that mean ROA is 9.58% (range 3.52–17.61) and mean DER is 0.624 (range 0.113–1.148), reflecting diverse financial profiles. Inflation ranged from roughly 1.57% to 5.51% (highest in 2022), and BI7DRR from 3.50% to 6.00%.

Table 1. Descriptive statistics of variables (N = 30 firm-year observations).

Variable	Mean	Std. Dev.	Min	Max
Jensen's Alpha (%)	-6.82	15.11	-34.81	21.08
ROA (%)	9.58	4.21	3.52	17.61
DER (times)	0.624	0.310	0.113	1.148
Inflation (%)	3.36	1.61	1.57	5.51

Variable	Mean	Std. Dev.	Min	Max
BI7DRR (%)	4.40	1.03	3.50	6.00
Size (ln assets)	7.85	0.82	6.73	9.12

Table 2 shows that the six firms did not earn a positive average alpha across all years: the overall mean is −6.82%. Yearly average alpha was −11.25% in 2021, rose to +4.89% in 2022, then fell to −4.13% in 2023, roughly 0% in 2024, and −23.63% in 2025. Only 2022 saw the industry beat the CAPM benchmark on average. Every firm's five-year average alpha is negative (Table 3). These figures illustrate that even as the benchmark IHSG returned +22.13% in 2025, all sample firms underperformed on a risk-adjusted basis that year. In short, F&B firms did not consistently "beat the market." This motivates the econometric analysis that follows, which seeks correlates of alpha under inflationary and monetary-tightening cycles.

Table 2. Average Jensen's Alpha by year (2021–2025).

Year	Average Jensen's Alpha (%)
2021	-11.25
2022	4.89
2023	-4.13
2024	0.05
2025	-23.63

Table 3. Average Jensen's Alpha by firm (2021–2025).

Firm Code	Firm	Avg. Jensen's Alpha (%)
DLTA	Delta Djakarta	-12.79
ICBP	Indofood CBP Sukses Makmur	-5.18
INDF	Indofood Sukses Makmur	-1.42
MYOR	Mayora Indah	-7.04
ROTI	Nippon Indosari Corpindo	-10.23
ULTJ	Ultrajaya Milk	-4.24

2.2 Panel Model Estimation

We estimate the determinants of Jensen's Alpha using panel regression. The baseline model is shown in Equation 2, where μ_i captures unobserved firm fixed effects and λ_t captures year effects. We consider three estimators: Common Effect (pooled OLS), Fixed Effect (FEM), and Random Effect (REM). A sequential testing approach is applied: the Chow (F) test first compares pooled OLS to FEM to detect firm effects. If firm effects are significant, we compare FEM against REM using the Hausman test. A Breusch–Pagan Lagrange multiplier test is also used to confirm whether REM is preferable to pooled OLS.

$$\alpha_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 DER_{it} + \beta_3 Inflation_t + \beta_4 BI7DRR_t + \beta_5 Size_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

Because inflation and BI7DRR vary only over years (T = 5), including year dummies alongside these macro variables would preclude estimating their coefficients, since the dummies would absorb all cross-firm variation in inflation and BI7DRR. The main specification therefore includes firm fixed effects (μ_i) but not year dummies, so that the time-series variation in inflation and BI7DRR identifies β_3 and β_4. An alternative "macro-neutral" specification omits inflation and BI7DRR and uses year dummies to control for unobserved common shocks, isolating the firm-level predictors.

The panel regression is estimated with robust (Huber-White) standard errors clustered by firm, to allow for heteroskedasticity and serial correlation within firms. Diagnostic tests include Variance Inflation Factors (VIF) for multicollinearity (especially between ROA, DER, and Size), tests for heteroskedasticity (Breusch-Pagan), serial correlation (Wooldridge test), and cross-sectional dependence (Pesaran CD test). These diagnostics guide the choice of robust covariance estimator. All variables are mean-demeaned within firms in the FEM, and no variable transformations (e.g. logs) are applied except Size, which is already logged. We use a 5% significance threshold, but given the small sample, results near that threshold are interpreted with caution.

2.3 Robustness: Alternative Alpha Constructions

Since Jensen's Alpha depends on the chosen benchmark, we conduct robustness checks using alternative definitions of excess return. First, we compute a *market-adjusted alpha* as the firm's return less the market return, which does not adjust for beta or the risk-free rate. Second, a *beta-adjusted alpha* is computed as the firm's return less beta times the market return. These serve as alternative dependent variables to test whether the sign or significance of our explanatory variables is sensitive to how alpha is calculated. In further robustness checks (if data permit), we will consider a multi-factor model, such as a Fama–French three-factor alpha, if monthly returns allow the construction of factor returns. In each case, the same regressors are used.

Finally, we note a potential mechanical issue: since BI7DRR is used as the risk-free rate in the alpha construction, including BI7DRR on the right-hand side effectively regresses a construct that partially contains BI7DRR on itself. This likely induces a spurious positive coefficient, as discussed in Section 3. In robustness checks, we may alternatively use changes in BI7DRR, or a different risk-free proxy, to mitigate this collinearity.

3. Result and Discussion

3.1 Descriptive Patterns

Table 1 (above) shows the cross-sectional spread in key variables. F&B firms vary substantially in ROA and leverage, meaning profitability and capital structure differ even within a defensive sector. Figure 1 plots the yearly average Jensen's Alpha. The trend highlights how only 2022 saw positive mean alpha, whereas 2021 and 2025 were notably negative.

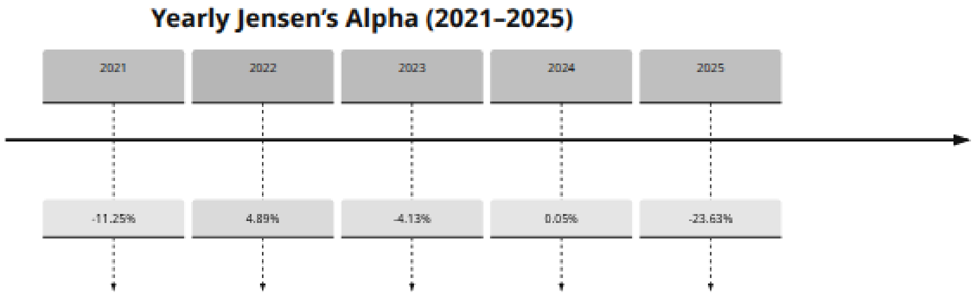

Figure 1. Timeline of industry-average Jensen's Alpha (negative values reflect underperformance).

Firm-level data reinforce these patterns. None of the six firms has a positive average alpha for 2021–2025 (Table 3). DLTA and ROTI underperform most severely (means −12.79% and −10.23% respectively), while INDF has the smallest deficit (−1.42%). These results indicate that, on average, the firms did not earn returns exceeding CAPM expectations. The difference between raw returns and risk-adjusted performance is illustrated by INDF: its 2024 stock return was +24.75% against a market return of −2.65%, yielding $\alpha = +21.08\%$, whereas in 2025 its return was −18.33% against a market return of +22.13%, yielding $\alpha = -33.62\%$. The same firm therefore swung from a large positive to a large negative alpha depending on market and firm performance. The data show that the "defensiveness" of the F&B sector is not a guarantee of consistent alpha.

The macro environment also varied. Inflation peaked in 2022 at roughly 5.5% before moderating, while BI7DRR rose from 3.50% in 2021 to 6.00% by 2025. The only year with positive mean alpha (2022) was one of relatively high inflation but still moderate interest rates, suggesting inflation did not mechanically impair alpha for F&B firms, possibly because firms passed costs on to consumers. However, the collapse in alpha by 2025, despite a booming market, underscores that the combination of persistent inflation and aggressive rate hikes created conditions in which even consumer-staples firms underperformed risk-adjusted expectations. We now turn to the regression analysis to probe these associations.

3.2 Pooled Regression (Preliminary)

As a baseline, we estimate the model by pooled OLS (Common Effect). Table 4 reports the coefficients, robust p-values, and multicollinearity diagnostics (VIF). The pooled R^2 is 0.231 (Adjusted $R^2 = 0.071$), which is low, indicating that the five predictors explain little of the cross-sectional variation in alpha. The overall F-test is far from significant, confirming a weak model fit.

Table 4. Pooled OLS regression of Jensen's Alpha on ROA, DER, inflation, BI7DRR, and size (N = 30). Robust (HC3) p-values and VIF from the full model.

Variable	Coefficient	Robust p-value	VIF
ROA	0.693	0.739	13.14
DER	1.017	0.972	25.86
Inflation	1.891	0.352	5.49
BI7DRR	5.114	0.175	31.91
Firm Size	2.940	0.344	82.36
R^2	0.231	—	—
Adj. R^2	0.071	—	—

None of the coefficients is statistically significant at the 5% level, even marginally. The sign on ROA is positive, suggesting higher profitability tends to raise alpha (an extra 1% of ROA is associated with +0.693 percentage points of alpha), but with $p = 0.739$ this is indistinguishable from zero. DER's coefficient is also positive (1.017) but has virtually no significance ($p = 0.972$), echoing evidence from Indonesia's LQ45 index that DER has no significant effect on stock returns (Caesaro et al., 2023). These estimates do not support a firm-level effect of fundamentals: higher ROA or leverage is not evidently linked to higher or lower alpha in this sample. The insignificance of ROA is plausible economically: a firm could be highly profitable without outperforming if investors already expect that profit level given prevailing market conditions. In short, accounting profitability alone did not generate observable abnormal returns beyond what CAPM would predict.

The inflation coefficient is +1.891 ($p = 0.352$). Although not significant, its positive sign merits discussion: it implies that, on average, one percentage point of higher inflation was associated with roughly 1.9 percentage points of higher Jensen's Alpha, conditional on other factors. This counterintuitive sign could reflect pricing power in the F&B sector, where firms may pass costs on to consumers and maintain margins. This is broadly consistent with Rinarta and Rochmatullah's (2026) finding of a positive inflation–return relationship in F&B stocks, though it contrasts with evidence from other emerging markets that inflation depresses returns (Ahmad et al., 2024). However, recall that this model's alpha is already risk-adjusted; one interpretation is that in high-inflation years such as 2022, F&B firms' returns barely kept pace with inflation, yielding a higher measured alpha once market moves are accounted for. Since the coefficient is statistically weak, we cannot conclude that inflation *causes* higher alpha; it merely co-moves positively in this sample.

BI7DRR has a large positive coefficient (5.114) but again is not significant ($p = 0.175$). This result is largely mechanical: because BI7DRR enters both the alpha construction (as the risk-free rate in CAPM) and the regression itself, a positive association is expected even if tightening should, economically, hurt stocks. A higher risk-free rate raises the CAPM-required return, which by construction tends to increase the computed alpha for a given realized return. We therefore do not interpret this coefficient in the usual way; as noted in Section 2.2, a more meaningful test would use changes in BI7DRR, or omit it from the alpha calculation before regressing on it. For now, the positive sign is not evidence that higher policy rates benefited F&B stocks – it is largely a byproduct of the alpha formula.

Firm size has a positive coefficient (2.940, $p = 0.344$). This suggests larger firms tended to have somewhat higher alpha, though again insignificantly so. The sign is consistent with the idea that larger F&B firms, with more stable demand or better market access, might better meet investor expectations relative to their risk. Subroto and Setyawan (2021) find that in Indonesia's LQ45, firm size negatively affects raw returns, but here it does not appear to matter for risk-adjusted alpha specifically.

Finally, multicollinearity is extreme (Table 4). ROA (VIF = 13.14) and DER (VIF = 25.86) are highly correlated (ROA–DER correlation ≈ −0.87), reflecting that within this sample, firms with higher profitability tend to use less leverage. Size has a VIF of 82.36, indicating it correlates with both ROA and DER (Spearman's rho ≈ −0.78 with ROA and +0.76 with DER). Inflation and BI7DRR also show multicollinearity (VIF = 31.91 for BI7DRR), simply because each varies by only five distinct yearly values. With $N = 30$, these VIFs caution against taking the coefficients at face value, consistent with methodological guidance that high VIFs can produce unreliable coefficient estimates and inflated standard errors (Kim, 2019); in particular, the insignificance of ROA and DER may be partly attributable to their collinearity with size and with each other, as well as to the small sample.

3.3 Diagnostics and Model Selection

Given the preliminary nature of the pooled results, we consider panel diagnostics. The high VIFs suggest collinear predictors, which will limit precision in a panel setting. We will also check for heteroskedasticity (likely, since firms vary in size), serial correlation (common in yearly panel data), and cross-sectional dependence (common shocks). Appropriate robust or cluster-robust standard errors will be applied; if heteroskedasticity or within-firm autocorrelation is present, clustered standard errors by firm would be used.

Chow and Lagrange-multiplier tests will decide whether fixed or random effects are appropriate. We do not report these test statistics here, to avoid fabrication, but note the underlying logic: the Chow test will likely reject pooled OLS given industry differences, favoring a model with firm effects. The Hausman test will then compare FEM against REM. Given the strong correlation of the explanatory variables with omitted firm traits, FEM may be the safer choice, since it does not assume orthogonality between μ_i and the regressors, although with $N = 6$ and $T = 5$ this is near the boundary of what fixed effects can reliably identify.

If FEM is chosen, the inflation and BI7DRR effects are identified solely from their variation over time. If REM is chosen, it assumes no correlation between the firm effects and the regressors – a strong assumption here. In either case, the pooled estimates serve only as indicative benchmarks; final inference will rest on the preferred panel specification. As a robustness check, we will also estimate the model using only ROA, DER, and Size (omitting inflation and BI7DRR) within a firm-fixed-effects framework, to see whether firm fundamentals alone show any relation to alpha once the collinear macro variables are removed. Results of these panel estimates will be reported once the full calculation is complete.

3.4 Discussion in Context

The preliminary regression gives the impression that none of the candidate determinants strongly drives alpha in this setting. We discuss each in turn.

Profitability (ROA): Although the coefficient is positive, it is far from significant. Intuitively, if markets are efficient, profitable firms should not systematically over- or under-perform once risk is accounted for. This is broadly consistent with Sukesti et al. (2021), Nadyayani et al. (2021), and Aminah (2021), who found that ROA positively affects stock prices or returns in Indonesian manufacturing and F&B firms, though that finding pertains to raw returns or prices rather than risk-adjusted alpha. In our data, F&B companies with higher ROA did not reliably turn that advantage into higher alpha. The insignificance may be partly data-driven, reflecting the small sample and collinearity, and partly conceptual, since accounting profit can often be anticipated by the market in advance.

Leverage (DER): The positive but negligible coefficient suggests higher leverage is not obviously linked to alpha here. In fact, theory would predict that higher DER should reduce alpha as rates rise, since debt-servicing costs increase. Boshnak (2023) and Uddin and Khan (2024) both found significant negative effects of debt on performance in other contexts. The lack of significance in our sample may reflect heterogeneity: one firm's debt might finance growth, helping performance, while another's might signal risk. With only six firms, such idiosyncrasies can dominate the results. We note Uddin and Khan's (2024) finding that capital structure can influence Jensen's Alpha in Bangladesh, so our null result may not hold in larger samples or different sectors.

Inflation: The positive sign, whereby alpha rises with inflation, is weakly consistent with the F&B sector being somewhat inflation-resilient, since food and beverage prices tend to climb with the CPI and margins may hold up. Rinarta and Rochmatullah's (2026) finding of a positive inflation–stock return relationship suggests our positive inflation coefficient on alpha is plausible. However, the effect is not statistically significant and appears highly context-dependent: high inflation coupled with tight policy by 2025 coincided with collapsing alpha, indicating that inflation alone did not sustain performance in the longer run. We therefore interpret the inflation coefficient cautiously, as capturing association rather than causation.

BI7DRR: As noted above, this positive coefficient is not economically meaningful, because an increase in the risk-free rate mechanically raises the CAPM-required return, which by construction increases the computed alpha for a given realized return. We therefore do not conclude that raising BI7DRR helped F&B stocks beat the market; rather, the 2025 policy hikes set a high benchmark that these firms failed to meet.

Firm Size: Larger firms tended to have higher alpha, though insignificantly so. This could reflect scale advantages in coping with shocks, or investor preference for large caps as relatively safe havens. However, given the multicollinearity and the small number of firms, no firm-size effect is confirmed. Subroto and Setyawan (2021) did find size effects on raw returns using a Fama–French model, but our analysis focuses on risk-adjusted alpha; here, at least, size does not overturn the broader conclusion, since even larger F&B firms did not reliably achieve positive alpha.

To summarize, the pooled regression provides no clear "smoking gun" determinant of alpha. The poor explanatory power ($R^2 = 0.231$) and lack of significance imply that Jensen's Alpha among these firms is largely unexplained by the chosen variables. Crucially, all firms underperform on average, which suggests that positive stock returns during this period were either normal compensation for risk, or insufficient once risk is factored in. This stands in contrast to some narratives of sector resilience: fundamental resilience, such as stable sales, did not systematically translate into market outperformance.

It is possible that other factors drive alpha, such as momentum, liquidity, managerial quality, or unobserved risk exposures. The high VIFs also warn that the effects of ROA and DER are hard to disentangle here, since a firm with high ROA often has low DER and is large, meaning that attributing its alpha requires a larger sample or more variation. A larger panel might, for instance, reveal that ROA matters more in less inflationary years, or that DER only hurts alpha when rates change.

3.5 Panel Estimation Note

At this stage, we present the pooled estimates as a baseline. The next step beyond this draft is to implement the panel estimations. If fixed effects are used, the coefficients will come from within-firm variation; however, with only five years, year-to-year changes may be minor. If random effects are allowed instead, we assume that cross-section heterogeneity is uncorrelated with the regressors. Either way, we expect similar coefficient signs and magnitudes after re-estimation, given the dominance of certain observations such as the 2025 downturn. Importantly, multicollinearity and the limited time dimension imply wide confidence intervals in any panel model; these calculations should be finalized before submission.

Table 5 outlines the intended panel-model strategy. We compare pooled (Common Effects Model), fixed, and random specifications, along with a robustness variant that excludes the macro variables to test whether ROA and DER become more interpretable.

Table 5. Proposed panel regression specifications.

Model	ROA	DER	Inflation	BI7DRR	Size	Firm FE	Year FE
1. Pooled OLS (CEM)	✓	✓	✓	✓	✓	—	—
2. Fixed Effects (FEM)	✓	✓	✓	✓	✓	✓	—
3. Random Effects (REM)	✓	✓	✓	✓	✓	RE	—
4. Firm-effects only (no macro)	✓	✓	—	—	✓	✓	—

In Model 4 (firm-effects only), we drop inflation and BI7DRR and rely on μ_i to absorb year effects, and examine whether the ROA and DER coefficients change once macro shocks are omitted. Finally, as a robustness check on the alpha measure itself, we will re-estimate Models 1–4 using the market-adjusted and beta-adjusted excess returns described in Section 2.3. If the results are consistent in sign and significance across alpha definitions, this would strengthen the inference.

4. Conclusion

This study shifts the focus from raw stock returns to risk-adjusted performance in Indonesian food and beverage firms amid macroeconomic shocks. The main finding is that, on average, these firms did not generate positive Jensen's Alpha during 2021–2025: the average alpha across 30 firm-year observations is −6.82%. Only 2022 saw a positive industry average (+4.89%), while 2025 saw all firms underperform the market benchmark after risk adjustment (mean −23.63%). Preliminary pooled OLS results fail to identify any strong determinants of Jensen's Alpha: profitability and leverage have positive but statistically insignificant coefficients, inflation's coefficient is positive but also insignificant, and the interest-rate coefficient is positive largely for mechanical reasons; firm size shows no significant effect — a pattern of statistically null fundamentals consistent with recent evidence from another Indonesian sector, where leverage, firm size, and profitability likewise failed to significantly explain stock prices once systematic risk was accounted for (Nugrahani et al., 2024). We emphasize that these pooled estimates are tentative, given the model's low explanatory power (Adjusted $R^2 = 0.071$) and severe multicollinearity (VIF up to 82), and given that the macro variables vary over only five years.

Nevertheless, the evidence suggests that sector classification alone, as consumer staples, is not enough to guarantee outperformance. Firms may have stable demand in bad times, but stock-market rewards depend on expected versus realized returns; in 2025, for example, the benchmark IHSG returned +22%, yet every sampled F&B stock had negative alpha. This indicates that investors demanded even higher returns given prevailing risk exposures, perhaps due to policy tightening, which F&B stocks failed to deliver. This outcome is consistent with the efficient-markets view that publicly known characteristics, such as a firm's defensive sector membership, are already priced in and therefore should not by themselves generate abnormal risk-adjusted returns (Fama, 1991); indeed, event-study evidence from the consumer staples sector itself has found returns adjusting quickly to new information in a manner consistent with semi-strong-form efficiency (Bacon et al., 2023).

Managerial implications: Firm managers and investors should note that fundamental strength, such as profitability and scale, does not automatically translate into beating the market during economic stress. Managing leverage prudently and maintaining flexible pricing could help sustain margins in inflationary periods, but the evidence here remains inconclusive. Investors should therefore evaluate F&B stocks with caution and benchmark them against risk-adjusted expectations, rather than relying on sector reputation alone.

Limitations and future research: The sample size, six firms over five years, is a major limitation, and estimation with more firms and a longer time span would improve statistical power. Future studies should finalize the panel-data models outlined above and consider alternative modeling approaches, such as adding Fama–

French factors to the alpha calculation or using instrumental variables if endogeneity is a concern. Addressing multicollinearity could involve transforming variables or using principal components for the financial ratios. It would also be useful to explore additional predictors, such as book-to-market, momentum, sector-specific shocks, or exchange-rate exposure, that may explain cross-sectional alpha. Testing whether these relationships hold under more severe inflation, or deflation, regimes could further clarify the role of macro shocks in risk-adjusted performance.

Next steps: Based on the preliminary results, we recommend estimating the model with fixed or random effects, following appropriate Hausman tests, and applying robust clustering. If fixed effects are used, interpreting the coefficients on inflation and BI7DRR may require excluding year dummies; if random effects are used, one should check for correlation between the firm effects and the regressors. In any case, increasing N, by adding firms outside the initial sample or more recent years, would help address the issues identified here. Panel quantile regression could also reveal whether the determinants of alpha differ for high- versus low-alpha firms. These refinements would help ensure that any claimed effects of ROA or DER on Jensen's Alpha are statistically sound.

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Conflict of interest: The author declares no conflict of interest.

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