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Anchoring Effects and Valuation Persistence in the Indonesian Consumer Non-Cyclical Sector: A Dynamic System GMM Approach

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A B S T R A C T

This study investigates market valuation determinants within the Indonesian consumer non-cyclical sector (2018–2024). Utilizing a dynamic System Generalized Method of Moments (System GMM) approach on 58 firms, the research examines the impact of Altman Z"-Score, Piotroski F-Score, Mohanram G-Score, and Beneish M-Score on Price to Book Value. Findings reveal strong valuation persistence, where lagged Price-to-book Value (PBV) serves as the primary anchor, while traditional accounting signals exhibit limited immediate influence. This highlights the psychological-adaptive nature of defensive sector valuations in emerging markets. The results suggest that historical momentum outweighs conventional fundamental signals, contributing to the literature on valuation inertia and signaling effectiveness in stable industries. This research provides critical insights for investors navigating defensive asset pricing.

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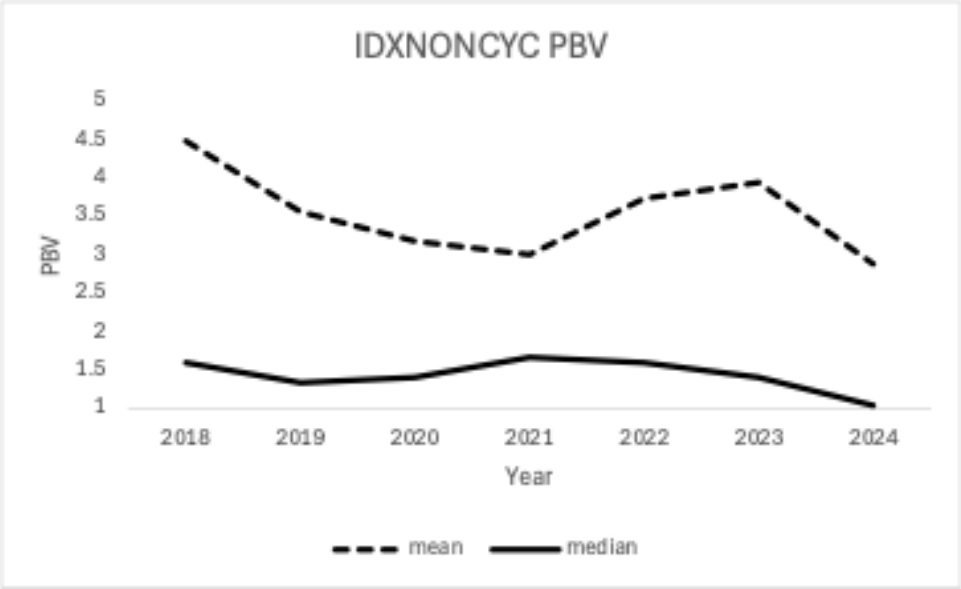
INTRODUCTION

The Indonesia Stock Exchange Industrial Classification (IDX-IC), implemented in 2021 to replace the Jakarta Stock Exchange Industrial Classification (JASICA), categorizes listed entities based on their market exposure to final products and services to provide standardized guidance for peer-group benchmarking. Within this framework, the consumer non-cyclical sector (IDXNONCYC)—comprising defensive stocks resilient to seasonal shifts and economic cycles—is a critical focal point, having established July 13, 2018, as its base calculation date. According to the September 2025 BEI (*Bursa Efek Indonesia* / Indonesia Stock Exchange) Statistical Report, the IDXNONCYC sector includes 122 listed companies, with the majority concentrated in food and beverages (94 firms) and primary goods retail (13 firms), followed by household products, tobacco, and other miscellaneous sub-sectors.

In real economic terms, four sub-sectors within the consumer non-cyclical industry demonstrated notable resilience throughout the pandemic era commencing in 2020. The Indonesian food and beverage industry has been identified as a cornerstone of post-COVID-19 economic growth (Deloitte, 2020), while research synthesized by Marsyukrilla (2022) indicates that tobacco consumption remained largely insulated from the pandemic's adverse effects. Furthermore, the retail sector successfully navigated the crisis through a strategic digital transformation (Grahadyarini, 2021), and the personal care segment emerged as a high-growth category as consumer priorities shifted in response to the global health crisis (Mediana, 2021).

Figure 1. IDXNONCYC PBV Trend



Source: author's compilation from tradingview.com

Investment entails a contemporary commitment of resources in anticipation of future benefits, necessitating a strategic equilibrium between risk and return that remains central to efficient asset pricing (Bodie et al., 2021). A primary risk for equity investors is corporate insolvency, which is often preceded by financial distress signals related to profitability, liquidity, and solvency—most

notably captured by the Altman Z-Score (Altman, 1968). In emerging economies such as Indonesia, early distress identification is a critical instrument for ensuring financial sustainability and accurately mitigating risk for diverse stakeholders (Kristanti et al., 2025). Furthermore, fundamental accounting analysis can significantly recalibrate investor return distributions; frameworks such as Piotroski's FSCORE (Piotroski, 2000) and Mohanram's GSCORE (Mohanram, 2005) offer systematic methodologies for identifying financial strength and generating significant excess returns. This fundamental scrutiny extends to the detection of earnings manipulation via the MSCORE (Beneish, 1999), as firms exhibiting aggressive accounting typically underperform across various portfolio benchmarks (Beneish et al., 2012). Ultimately, investors rely on valuation—the integration of science and art to derive intrinsic value (Damodaran, 2012)—often utilizing the Price to Book Value (PBV) ratio as a primary relative valuation metric. Within the Indonesian consumer non-cyclical sector (2018–2024), the observed narrow range of PBV medians (Figure 1) suggests a potential state of valuation persistence, raising essential questions about the role of path dependency in investor decision-making.

The valuation of consumer non-cyclical firms in Indonesia presents a phenomenological puzzle where, despite perceived defensive qualities of the IDXNONCYC index, its underperformance compared to the LQ45 and the broader composite index (Indonesia Stock Exchange, 2025) serves as the primary impetus for this investigation. While these firms are viewed as stable havens (Nadya, 2023), their index performance growth by September 30th, 2025, were lower (-20.44%) since base date (July 13th, 2018). This research contributes to knowledge enrichment by capturing a niche sample of the IDXNONCYC sector during a volatile economic timeline (2018–2024), offering a unique perspective on valuation inertia. This study's novelty lies in employing dynamic modeling to elucidate the "anchor effect" of previous valuations, a factor often neglected in static cross-sectional analyses. Understanding the persistence of valuation is critical for institutional investors in emerging markets. Consequently, this study aims to determine whether traditional accounting signals effectively drive market value or if the sector is governed by high degrees of valuation persistence, questioning the immediate relevance of fundamental indicators in defensive industries.

THEORETICAL REVIEW

Efficient Market Hypothesis (EMH)

According to the semi-strong form of the Efficient Market Hypothesis (Malkiel & Fama, 1970), stock prices are assumed to reflect all publicly available fundamental information. Consequently, accounting signals such as Z"-Score, F-Score, and G-Score are expected to be fully discounted into current market prices. However, the efficacy of these signals often varies across contexts; for instance, the accuracy of bankruptcy prediction models like Altman is frequently benchmarked against alternatives such as Taffler or Zmijewski to ensure signal precision (Marpaung & Yunita, 2026).

Furthermore, recent machine learning approaches in emerging markets demonstrate that integrating operational and financial features can provide more robust predictions for financial sustainability (Kristanti et al., 2025).

Signaling Theory

Signaling theory, pioneered by Spence (1973), posits that firms utilize financial disclosures to transmit signals regarding their intrinsic quality to the market, thereby mitigating information asymmetry. The efficacy of these signals in influencing investment decisions is further contingent upon investor digital and financial literacy, with information disclosure serving as a critical mediating variable (Zukhruf Ramadhani et al., 2026). In this research, financial health (Altman Z''-Score (Altman et al., 1998)), fundamental strength (Piotroski F-Score (Piotroski, 2000)), and growth potential (Mohanram G-Score (Mohanram, 2005)) function as positive signals, whereas earnings manipulation risk (Beneish M-Score (Beneish, 1999)) represents a negative signal. Formulated hypothesis based on this are:

H1: Financial health (Altman Z''-Score) positively affects Price to Book Value (PBV).

H2: Fundamental strength (Piotroski F-Score) positively affects PBV.

H3: Growth fundamentals (Mohanram G-Score) positively affect PBV.

H4: Earnings manipulation (Beneish M-Score) negatively affects PBV.

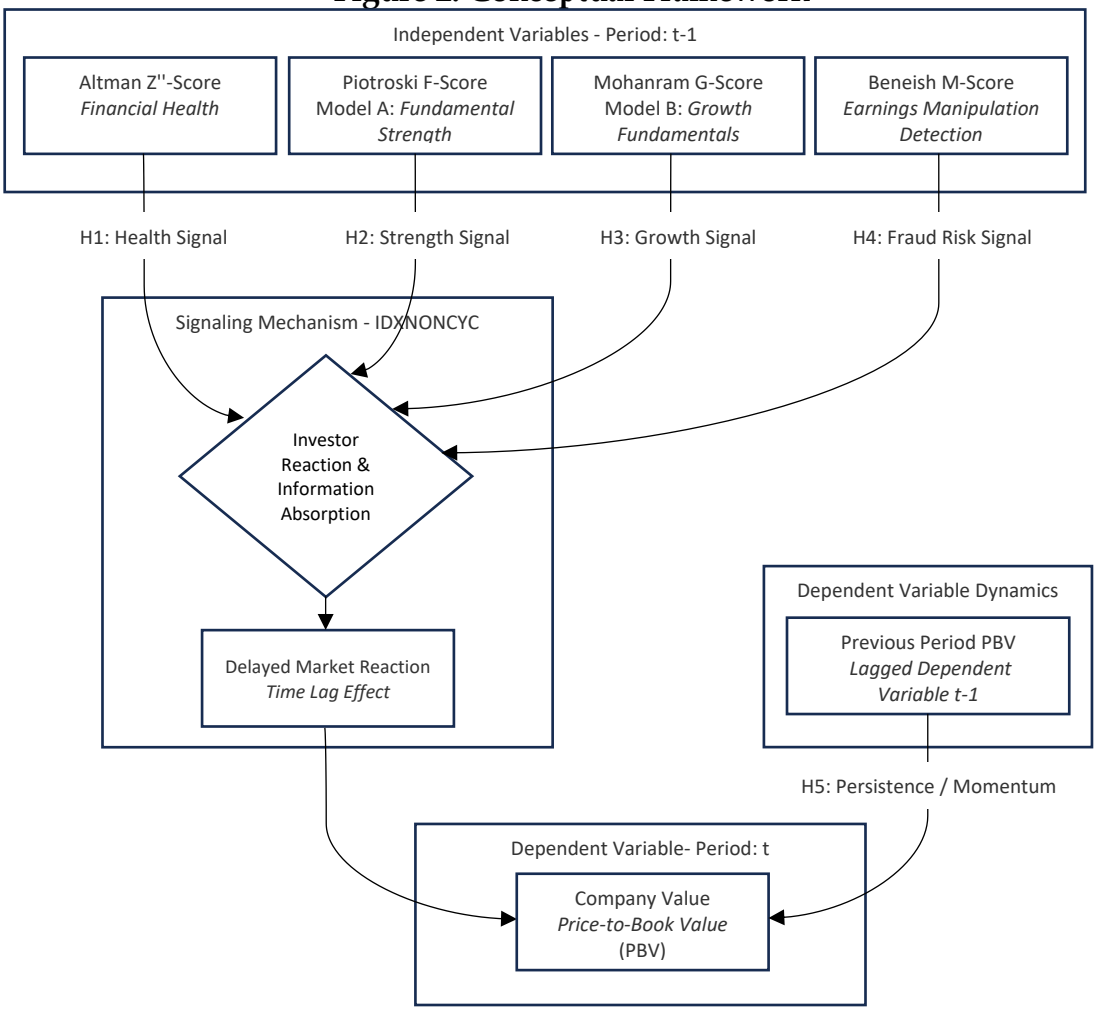
Ohlson Model

The Ohlson (1995) model provides a comprehensive framework where a firm's current value is a function of its historical state, providing the theoretical basis for valuation persistence. In defensive industries such as the consumer non-cyclical sector, market valuations often exhibit significant inertia, where current market prices are heavily anchored to the previous period's valuation (valuation anchor). This possibility of persistence is formulated as followed hypothesis:

H5: Lagged PBV has a significant impact on current PBV.

This study is anchored in the Efficient Market Hypothesis (EMH), specifically the semi-strong form, which posits that stock prices reflect all publicly available fundamental information. Supplementing this, Signaling Theory suggests that financial scores—such as the Altman Z-score or Piotroski F-score—act as signals to mitigate information asymmetry. Previous research by Marpaung & Yunita (2026) emphasizes that while the Altman Z-score remains a benchmark for financial stability, its accuracy can vary across sectors, necessitating a comparison with models like Taffler or Zmijewski. Furthermore, Ohlson's Model provides the theoretical underpinning for Valuation Persistence, suggesting that current firm value is a stochastic function of its historical state. While Piotroski (2000) and Mohanram (2005) argue for the predictive power of fundamental strength and growth, this study tests if these signals are secondary to the momentum of past valuations in the Indonesian context. The contextual framework (Figure 2) thus integrates signaling effectiveness with the dynamics of price inertia.

Figure 2. Conceptual Framework



METHODOLOGY

This research adopts a quantitative design utilizing a balanced panel of 58 consumer non-cyclical companies listed on the IDX from 2018 to 2024. Data preparation includes outlier mitigation via winsorization at the 1st and 99th percentiles. To address endogeneity and the dynamic nature of market valuation, the study employs the Two-step System Generalized Method of Moments (GMM). This method is preferred over static models as it utilizes internal instruments to provide consistent estimates in the presence of lagged dependent variables. Diagnostic rigor is maintained through the Sargan test for instrument validity and the Arellano-Bond AR(2) test for second-order serial correlation. Finally, Driscoll-Kraay robust standard errors are applied to ensure results are resilient against heteroscedasticity and cross-sectional dependence.

As of March 2026, 132 companies listed within the consumer non-cyclical sector (IDXNONCYC) of the Indonesia Stock Exchange. Utilizing a purposive sampling methodology, the study selects 58 firms that satisfy stringent inclusion criteria: a minimum listing history since 2018 and the availability of comprehensive annual financial reports for the entire 2018–2024 observation period. From the initial population, 63 companies were excluded due to listing after 2018, while another 11 firms were removed for providing incomplete

longitudinal data. This process yielded a balanced panel dataset totaling 406 observations. Data was collected using tradingview.com as aggregator.

Statistical data processing and econometric modeling in this study were executed using R software version 4.5.2. The core analysis, particularly the implementation of dynamic panel data estimations, relied on the plm package version 2.6.7, as authored by Croissant & Millo (2008). To ensure rigorous diagnostic testing and comprehensive statistical evaluation, several auxiliary modules were employed: lmtest version 0.9.40 (Zeileis & Hothorn, 2002) for regression diagnostics, EnvStats version 3.1.0 (Millard, 2013) for descriptive and environmental statistics, and the car package version 3.1.3 (Fox & Weisberg, 2019) to facilitate various linear hypothesis tests and model validation.

RESULTS

Data Characteristics

Prior to winsorization, firms within the IDXNONCYC sector generally exhibited robust financial health, with mean Altman Z"-Scores (ZSCORE) 3.43 and Piotroski F-Scores (FSCORE) 5.84 indicating a predominant "Safe Zone" status characterized by stable profitability and operational efficiency. However, the data revealed significant leptokurtic distributions and extreme outliers, particularly in the Beneish M-Score (MSCORE) Max = 1,908.81 and Price to Book Value (PBV) Std. Dev = 8.14. These anomalies were largely driven by specific reporting changes, such as those observed in the 2021 financial statements of BTEK, alongside extreme market overvaluations. The Shapiro-Wilk test ($p < 0.001$) confirmed non-normality across all variables, providing a rigorous empirical justification for data transformation to mitigate heteroscedasticity and residual non-normality.

Table 1. Pre and Post Winzorization

Variable	Condition	Mean	Median	Std. Dev	Min	Max	Skewness	Kurtosis
ZSCORE	Pre	3,4319	3,0697	5,5962	-27,9647	21,8135	-1,0486	5,7913
	Post	**3,4717**	**3,0697**	**5,2315**	**-16,9731**	**15,5669**	**-0,5871**	**2,7209**
FSCORE	Pre	5,8472	6,0000	1,7906	1,0000	9,0000	-0,0439	-0,7972
	Post	**5,8497**	**6,0000**	**1,7845**	**2,0000**	**9,0000**	**-0,0236**	**-0,8492**
GSCORE	Pre	3,3793	3,0000	1,4653	0,0000	7,0000	0,1138	-0,5382
	Post	**3,3799**	**3,0000**	**1,4638**	**0,0500**	**7,0000**	**0,1195**	**-0,5493**
MSCORE	Pre	2,5886	-2,5300	94,9162	-5,6885	1.908,81	20,1003	404,653
	Post	**-2,2488**	**-2,5300**	**1,8244**	**-4,8697**	**9,5785**	**4,5419**	**24,9053**
PBV	Pre	3,6271	1,3495	8,1445	-8,9114	68,6745	5,0449	28,4451
	Post	**3,5352**	**1,3495**	**7,2992**	**-0,0583**	**46,8117**	**4,5345**	**21,5629**

Post-winsorization results (Table 1) demonstrate a substantial enhancement in statistical stability and model reliability. The mean Beneish M-Score shifted from 2.5886 to -2.2488, aligning with the median and confirming that IDXNONCYC firms generally exhibit a low risk of earnings manipulation once idiosyncratic outliers are truncated. Furthermore, the Altman Z"-Score kurtosis fell from 5.79 to 2.72, and the PBV range narrowed by approximately 40%, effectively neutralizing the impact of extreme market fluctuations. These improvements ensure a more consistent dataset, providing a robust foundation for the subsequent dynamic panel estimations and hypothesis testing.

Models Specification

This study adopts the System Generalized Method of Moments (GMM) estimator (Blundell & Bond, 1998) across two primary empirical models, as FSCORE and GSCORE are hypothesized to represent the shared dimension of financial attractiveness. The selection of System GMM provides a rigorous methodological solution to the inherent limitations of static panel models—such as OLS, Fixed Effects, and Random Effects—by addressing four critical econometric concerns within the context of IDXNONCYC firm valuation. Specifically, the estimator captures temporal dynamics and path dependency through lagged dependent variables, mitigates endogeneity and simultaneity bias between accounting fundamentals and market valuation (PBV) using internal instrumentation, and eliminates Nickell bias and unobserved firm-specific heterogeneity prevalent in short time-series panels (T < 20). Given the study's specific data structure (T=7, N=58), System GMM offers enhanced statistical efficiency and consistency relative to the Difference GMM approach (Arellano & Bond, 1991), particularly in the presence of persistent variables where the levels-and-differences specification yields superior instrument strength.

Model A (FSCORE):

$$PBV_{i,t} = \alpha + \rho PBV_{i,t-1} + \beta_1 ZSCORE_{i,t-1} + \beta_2 FSCORE_{i,t-1} + \beta_3 MSCORE_{i,t-1} + \eta_i + \varepsilon_{i,t} \quad (1)$$

Model B (GSCORE):

$$PBV_{i,t} = \alpha + \rho PBV_{i,t-1} + \beta_1 ZSCORE_{i,t-1} + \beta_2 GSCORE_{i,t-1} + \beta_3 MSCORE_{i,t-1} + \eta_i + \varepsilon_{i,t} \quad (2)$$

with α is intercept, ρ is lagged dependent variable coefficient, $\beta_1, \beta_2, \beta_3$ are coefficents, η_i is unobserved individual effect and $\varepsilon_{i,t}$ is idiosyncratic error term.

Table 2. Correlation Analysis

Variable	$ZSCORE_{t-1}$	$FSCORE_{t-1}$	$GSCORE\$_{t-1}$	$MSCORE_{t-1}$
$ZSCORE_{t-1}$	1,000			
F-$SCORE_{t-1}$	0,231	1,000		
$GSCORE_{t-1}$	0,451	0,410	1,000	
$MSCORE_{t-1}$	-0,014	-0,156	-0,210	1,000

Pearson correlation analysis of the post-winsorized data (Table 2) indicates that all bivariate coefficients are below the 0.5 threshold, suggesting the absence of high collinearity among the variables. To rigorously verify these results, Variance Inflation Factor (VIF) tests (Table 3) were conducted for both empirical specifications—incorporating FSCORE and GSCORE respectively—in alignment with equations (1) and (2). The results show that all VIF values are well below the stringent threshold of 5, confirming that multicollinearity does not pose a threat to the regression estimates. Consequently, the study advances to the estimation of static and dynamic panel data models as defined in the research methodology.

Table 3. VIF Analysis

Independent Variable	Model A (FSCORE)	Model B (GSCORE)
$ZSCORE_{t-1}$	1,0572	1,2659
$FSCORE_{t-1}$	1,0833	--
$GSCORE_{t-1}$	--	1,3241
$MSCORE_{t-1}$	1,0254	1,0552
VIF Mean	**1,0553**	**1,2151**

Table 4. Chow, Breusch-Pagan dan Hausman Tests

Test Type	Model A (FSCORE)	Model B (GSCORE)	Null Hypothesis (H0)	Decision
Chow (Prob > F)	$F = 17{,}820$ $(< 0{,}0001)$	$F = 17{,}717$ $(< 0{,}0001)$	Pooled OLS	Select **Fixed Effect**
Breusch-Pagan (LM) (Prob > χ^2)	$\chi^2 = 461{,}19$ $(< 0{,}0001)$	$\chi^2 = 458{,}05$ $(< 0{,}0001)$	Pooled OLS	Select **Random Effect**
Hausman (Prob > χ^2)	$\chi^2 = 6{,}0168$ (0,1108)	$\chi^2 = 5{,}3733$ (0,1464)	Random Effect	Select **Random Effect**

Table 5. Comparison of One-Way and Two-Way Random Effect Model

Variable	Model A (One-Way)	Model B (One-Way)	Model A (Two-Way)	Model B (Two-Way)
(Intercept)	4.4067***	3.8752***	4.4070***	3.8759***
	(1.1424)	(1.0937)	(1.1430)	(1.0943)
ZSCORE_lag	-0.2085*	-0.2198*	-0.2086*	-0.2199*
	(0.1013)	(0.1018)	(0.1013)	(0.1018)
FSCORE_lag	-0.0697	—	-0.0697	—
	(0.1320)		(0.1319)	
GSCORE_lag	—	0.0632	—	0.0631
		(0.2116)		(0.2116)
MSCORE_lag	-0.0664	-0.0467	-0.0663	-0.0467
	(0.1237)	(0.1262)	(0.1237)	(0.1262)
Diagnostics				
R^2	0.0145	0.0139	0.0145	0.0139
Adj. R^2	0.0059	0.0053	0.0059	0.0053
Chisq (p-value)	5.05 (0.1685)	4.85 (0.1829)	5.05 (0.1685)	4.85 (0.1828)
Effects (Variance)				
Idiosyncratic	12.664	12.673	12.631	12.643
Individual	35.346	35.394	35.352	35.399
Time	—	—	**0.000**	**0.000**
Theta (θ)	0.7626	0.7627	0.7629	0.7630

*Note: Number in parenthesis ( ) are Robust Standard Error (Driscoll-Kraay). Significance: *** p < 0,01; ** p < 0,05; * p < 0,1.*

Static Models Analysis

Empirical results from the static panel analysis for the IDXNONCYC sector reveal that while ZSCORE initially appeared consistent, its significance was not robust under more stringent econometric specifications. Based on model selection tests summarized in Table 4, the Chow test and Breusch-Pagan test rejected Pooled OLS in favor of individual and time effects, while the Hausman test confirmed the efficiency of the One-Way Random Effects (RE) model (p >

0.05). Notably, the time variance indicator, when using Random Effect Two-Way model, is zero (0.000) as indicated in Table 5, implying that the 2018–2024 observation period—including the COVID-19 pandemic—exerted no significant temporal influence on firm PBV. Because of that, static model selection test is solely relied on One-Way models.

Table 6. Driscoll-Kraay Standard Errors

Independent Variables	Model A (FSCORE)	Model B (GSCORE)
Constant (Intercept)	4,4067***	3,8752***
	(0,6966)	(0,6578)
Z-SCORE $_{t-1}$	-0,2085	-0,2198
	(0,1372)	(0,1368)
FSCORE $_{t-1}$	-0,0697	--
	(0,0734)	
GSCORE $_{t-1}$	--	0,0632
		(0,0425)
MSCORE $_{t-1}$	-0,0664	-0,0467
	(0,0589)	(0,0679)
Estimation Method	Random Effect	Random Effect
Robust SE Type	Driscoll-Kraay (HC1)	Driscoll-Kraay (HC1)
Max Lag	3	3
Observations (N)	348	348

*Note: Number in parenthesis ( ) are Robust Standard Error (Driscoll-Kraay). Significance: *** p < 0,01; ** p < 0,05; * p < 0,1.*

However, when the RE model was subjected to a robustness check using the Driscoll-Kraay (DK) estimator to address heteroscedasticity, autocorrelation, and cross-sectional dependence, all independent variables, including ZSCORE, became statistically insignificant at both the 5% and 10% levels (Table 6). These findings demonstrate that the impact of ZSCORE is sensitive to entities and temporal correlations within the consumer non-cyclical sector, thereby justifying the transition to a dynamic System GMM framework to achieve more consistent and unbiased parameter estimations.

Dynamic Models Analysis

The analytical procedure began with diagnostic tests identifying the presence of individual effects, favoring panel modeling over pooled OLS. The System GMM estimation (Table 7) yielded a high coefficient for the lagged dependent variable, indicating significant temporal dependence. Diagnostic checks confirmed the model's integrity: the Sargan test yielded a p-value above 0.05, suggesting valid instruments, while the AR(2) test indicated no second-order autocorrelation.

The results show that the previous year's valuation is the most potent predictor of current PBV. In contrast, fundamental scores for health and growth failed to reach conventional significance levels. However, the indicator for earnings manipulation showed a marginal negative influence, suggesting a potential risk-premium adjustment by the market.

Table 7. System GMM Results

Independent Variables	Model A (FSCORE)	Model B (GSCORE)
PBV$_{t-1}$	0,7114***	0,6946***
	(0,0894)	(0,0879)

Z-SCORE $_{t-1}$	0,0530	0,0184
	(0,1174)	(0,1223)
FSCORE $_{t-1}$	0,0352	--
	(0,0430)	
GSCORE $_{t-1}$	--	0,2631
		(0,1607)
MSCORE $_{t-1}$	-0,0808	-0,0715*
	(0,0716)	(0,0401)
Observations (N)	406	406
Number of Instruments	36	36
Wald Test (χ^2)	186,66***	168,31***
Sargan Test (p-value)	0,5340	0,7804
AR(1) Test (p-value)	0,1315	0,0560
AR(2) Test (p-value)	0,2810	0,2835

*Note: Number in parenthesis ( ) are Robust Standard Error. Significance: *** p < 0,01; ** p < 0,05; * p < 0,1. Sargan test instrument validity (over-identifying restrictions). AR(2) tests serial correlation of second order.*

Hypothesis Testing

Hypothesis testing was executed using the System Generalized Method of Moments (GMM) as the primary empirical model (Table 8).

Table 8. Hypothesis Testing

Hyp.	Hypothesis Statement	Prediction	Model	Coefficient	z-stat	p-value	Decision
H1	Financial health (Altman Z''-Score) positively affects Price to Book Value (PBV)	(+)	A	0,0530	0,4512	0,6518	Rejected
			B	0,0184	0,1504	0,8805	Rejected
H2	Fundamental strength (Piotroski F-Score) positively affects PBV	(+)	A	0,0352	0,8191	0,4127	Rejected
H3	Growth fundamentals (Mohanram G-Score) positively affect PBV	(+)	B	0,2631	1,6369	0,1017	Rejected
H4	Earnings manipulation (Beneish M-Score) negatively affects PBV	(-)	A	-0,0808	-1,1280	0,2593	Rejected
			B	-0,0715	-1,7831	0,0746	**Accepted***
H5	Lagged PBV has a significant impact on current PBV	(+/-)	A	0,7114	7,9603	0,0000	**Accepted*****
			B	0,6946	7,9038	0,0000	**Accepted*****

Testing Criteria: (***) Hypothesis accepted if p-value < 0,01 (Significance 1%). (**) Hypothesis accepted if p-value < 0,05 (Significance 5%). (*) Hypothesis accepted, marginal significance level 10% (p-value < 0,10). Testing using System GMM Two-Step model with Robust Standard Errors.

The lagged dependent variable (PBV_{t-1}) was assigned a bidirectional (+/-) predicted sign to account for the theoretical conflict between valuation persistence and market-driven mean reversion; while the former suggests a positive trajectory, the latter implies a corrective mechanism should previous valuations reach overvalued thresholds. Since the System GMM results in this

study yield a positive coefficient for PBV_{t-1} within the Indonesian consumer non-cyclical sector, the findings confirm the dominance of valuation persistence (+) over mean reversion (-). This result indicates that historical market assessments serve as a stable anchor for current firm valuation, suggesting that price momentum and past investor perceptions are more influential than immediate corrective adjustments in this defensive industry.

DISCUSSION

The findings elucidate a strong "valuation anchor" effect within the Indonesian consumer non-cyclical sector, where historical market perception outweighs current accounting data. This phenomenon aligns with the Post-Earnings Announcement Drift (PEAD) theory (Ball & Brown, 1968), suggesting that information absorption is not instantaneous but follows a momentum-driven path. Most significantly, lagged PBV serves as a formidable anchor with a persistence coefficient of approximately 0.70, validating the phenomenon of PEAD wherein past market perceptions remain the dominant determinant of contemporary firm value.

The lack of significance for health and growth signals indicates that in defensive sectors, fundamental strength is already "priced in," supporting the semi-strong EMH. Interestingly, the market's sensitivity to earnings manipulation—indicated by the marginal significance of the M-score—reflects the importance of signal integrity. As Kristanti et al. (2025) note, predicting financial distress in emerging markets requires sophisticated modeling because distress events are rare, yet the market remains wary of manipulation as a precursor to failure. This risk-averse behavior is further complicated by, for example, investor literacy; Zukhruf Ramadhani et al. (2026) argue that digital and financial literacy, alongside behavioral factors like FOMO, play a mediating role in how disclosed information is translated into investment decisions. Consequently, the valuation persistence observed here likely reflects a combination of sector stability and a psychological reliance on historical price anchors.

Table 9. Model A (FSCORE) Coefficient Significance

Hypothesis	Variable	Estimate	Std. Error	z-stat	95% Conf. Interval	p-value	Status
H5	PBV_{t-1}	0,7114	0,0894	7,9603	[0,5362, 0,8865]	0,0000	**Significant**
H1	$ZSCORE_{t-1}$	0,0530	0,1174	0,4512	[-0,1772, 0,2832]	0,6518	Not Significant
H2	$FSCORE_{t-1}$	0,0352	0,0430	0,8191	[-0,0490, 0,1195]	0,4127	Not Significant
H4	$MSCORE_{t-1}$	-0,0808	0,0716	-1,1280	[-0,2211, 0,0596]	0,2593	Not Significant

Table 10. Model B (GSCORE) Coefficient Significance

Hypothesis	Variable	Estimate	Std. Error	z-stat	95% Conf. Interval	p-value	Status
H5	PBV_{t-1}	0,6946	0,0879	7,9038	[0,5224, 0,8669]	0,0000	**Significant**
H1	$ZSCORE_{t-1}$	0,0184	0,1223	0,1504	[-0,2213, 0,2581]	0,8805	Not Significant

H3	GSCORE $_{t-1}$	0,2631	0,1607	1,6369	[-0,0519, 0,5781]	0,1017	Not Significant
H4	MSCORE $_{t-1}$	-0,0715	0,0401	-1,7831	[-0,1500, 0,0071]	0,0746	**Significant**+

+ Marginally Significant (alpha 1%)

Empirical results from the System GMM and Driscoll-Kraay estimations consistently indicate that the Altman Z"-Score, Piotroski F-Score, and Mohanram G-Score do not exert a statistically significant influence on PBV within the studied sample. While the coefficients for ZSCORE, FSCORE, and GSCORE across both models exhibit positive directions (Table 9 and Table 10)—aligning with the theoretical expectation that signals of financial health and fundamental strength bolster firm valuation—this positive impact remains insufficient to explain the variance in PBV. These findings suggest that although accounting-based signals are directionally consistent with signaling theory, they do not serve as primary determinants of market value in the consumer non-cyclical sector.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that market valuation in the IDXNONCYC sector is predominantly driven by historical momentum, confirming the presence of valuation persistence. While traditional accounting fundamentals—such as financial health and growth scores—show negligible immediate impact, the market exhibits a cautionary response to signs of earnings manipulation.

The longitudinal observation from 2018 to 2024 captures the COVID-19 pandemic, an anomalous period that may distort long-term fundamental behaviors despite model indicators suggesting non-significant time variance. Furthermore, the variable selection is constrained to score-based accounting indicators (ZSCORE, FSCORE, GSCORE, and MSCORE), thus omitting broader market sentiment, macroeconomic policies, and intangible assets. The sector-specific focus on the IDXNONCYC sector limits the immediate generalizability of these results to industries with different risk profiles, such as technology or mining. Methodologically, while winsorization was essential to mitigate the influence of outliers, it potentially suppresses valuable information from firms characterized by truly extreme performance or risk profiles.

To address these findings, several practical and theoretical recommendations are proposed. Managers should prioritize reporting transparency and financial integrity over fundamental "window dressing," while investors are encouraged to adopt momentum-based strategies that account for the sector's high valuation persistence. Regulators, including the OJK and BEI, should strengthen oversight regarding earnings manipulation signals to mitigate information asymmetry for retail investors. Theoretically, future research should introduce moderating variables such as audit quality or institutional ownership and utilize machine learning to integrate broader financial and operational features (Kristanti et al., 2025). Furthermore, incorporating non-financial metrics like ESG scores and behavioral variables such as digital literacy (Ramadhani et al., 2026) will facilitate a more holistic understanding of firm valuation in emerging capital markets.

FURTHER STUDY

Future research should consider the integration of non-financial variables, such as Environmental, Social, and Governance (ESG) scores, to explore if qualitative disclosures provide a stronger signal than accounting metrics. Additionally, given the rapid digitalization of the Indonesian market, future studies should investigate how digital literacy and information disclosure transparency interact with fundamental signals to influence valuation persistence. Applying machine learning techniques, as suggested by Titik Kristanti et al. (2023) and Kristanti et al. (2025), may also uncover non-linear relationships between fundamental indicators and market value that traditional econometric models might overlook.

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