Digital Payments, QRIS Growth, and State-Owned Bank Portfolio Returns in Indonesia

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Abstract

This study examines whether QRIS growth and digital payment activity are associated with the equal-weight stock-return portfolio of Indonesian state-owned banks. Using a balanced exact-month sample of 12 observations drawn from official Bank Indonesia publications and market data, the article places correlation analysis at the center of the empirical design and treats parsimonious OLS-HC3 regressions as supporting evidence only. The results show that QRIS growth has a near-zero association with portfolio returns, while logged digital payment activity displays only a weak and unstable relationship once simple macro controls are introduced. These findings suggest that aggregate payment system expansion should not be interpreted as an immediate stand-alone signal for short-run stock returns in state-owned banks. The article contributes by offering a cautious measurement-first design for Indonesian digital-finance research and by showing that policy-relevant payment-system deepening does not necessarily translate into contemporaneous market revaluation within a small balanced monthly window.

Keywords: QRIS; Digital Payments; Stock Returns; State-Owned Banks; Correlation; Indonesia

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Introduction

Indonesia's payment system has undergone rapid digital transformation in recent years. Bank Indonesia has positioned payment-system digitalization as a core policy pillar through the Blueprint for the Indonesian Payment System 2025, which emphasizes interoperability, data integration, innovation, and regulatory reform in the digital era (Bank Indonesia, n.d.). More broadly, financial technology (fintech) is widely understood as a technology-enabled restructuring of financial services, implying that payment innovation can reshape the competitive landscape and revenue structure of incumbent banks (Arner et al., 2015). Despite these developments, firm-level financial performance remains a key determinant of stock valuation. Profitability has been identified as a strong predictor of stock prices in Indonesia's capital market, highlighting the dominant role of financial performance in valuation (Gunawan & Elshinta, 2025).

The practical relevance of this transformation became more evident during 2025. Official Bank Indonesia publications reported sustained growth in digital payment transactions, with QRIS maintaining exceptionally high year-on-year expansion (Bank Indonesia 2025a, 2025b). These developments indicate that QRIS has evolved beyond a simple payment instrument into a key indicator of the scale and deepening of Indonesia's digital payment ecosystem.

However, the capital-market implications of such aggregate payment indicators are not straightforward. Prior studies suggest that fintech and digital payment adoption can enhance bank performance, competition, and financial inclusion; however, the magnitude and timing of these effects vary across institutional contexts and business models (Alfawareh et al., 2025; Verdier, 2024; Xu et al., 2025; Zhu & Guo, 2024). Moreover, empirical findings are not always consistent, as financial indicators such as ROA and ROE may exhibit varying or insignificant effects depending on industry characteristics (Krisdayanti, 2021). In the short run, system-level transaction growth may not be immediately reflected in stock returns, as investors simultaneously incorporate macroeconomic conditions, firm-specific fundamentals, and broader market sentiment into asset pricing decisions. This suggests that investors continue to rely more heavily on firm-specific financial indicators when forming valuation expectations. Stock prices are significantly influenced by profitability indicators such as earnings per share (EPS) and return on investment (ROI), which reflect firm performance and investor expectations (Budhiarjo & Dewi, 2026).

This study therefore examines whether QRIS growth and digital payment activity are associated with the equal-weight stock-return portfolio of Indonesian state-owned banks. It

contributes in three key ways. First, it utilizes official high-frequency monthly indicators from Bank Indonesia rather than perception-based or annual proxies. Second, it links system-level payment statistics to a market-based outcome variable, namely a portfolio return constructed from four listed state-owned banks. Third, it adopts a deliberately conservative empirical strategy that prioritizes balanced sample comparability and parsimonious inference over sample expansion and model complexity.

The importance of this investigation lies in the broader role of QRIS and digital payments within Indonesia's financial architecture. Under the national payment-system blueprint, interoperability and standardization are expected to deepen the payment ecosystem, reduce transaction frictions, and expand digital financial inclusion (Bank Indonesia n.d.; Tee & Ong 2016). In principle, such developments may strengthen customer engagement, increase transaction-based revenues, and reinforce the strategic position of banks within an increasingly interconnected financial system.

Nevertheless, the translation of system-level payment growth into short-run stock returns is far from mechanical. Aggregate transaction expansion may reflect economy-wide digital adoption, while investors evaluate banking stocks through a multidimensional framework that includes earnings expectations, funding costs, competitive dynamics, exchange-rate pressures, and monetary conditions. Macroeconomic variables such as exchange rates significantly influence stock prices, while interest rates may exhibit varying effects depending on market conditions (Gunawan et al., 2026). Existing evidence also suggests that digital payment innovation can reshape market structure without necessarily producing an immediate one-to-one increase in bank market valuation (Verdier 2024; Zhang et al. 2019).

For this reason, the study does not assume a direct and immediate positive relationship between QRIS growth and stock returns. Instead, it empirically tests whether any observable association exists within a strictly balanced exact-month sample and interprets the results using a cautious inferential approach. The objective is not to claim causal relationships, but to provide a disciplined empirical assessment of whether Indonesia's payment-system indicators contain short-run informational value for the market valuation of state-owned bank portfolios.

This study is theoretically anchored in signaling theory and the efficient market hypothesis. From a signaling perspective, rapid growth in QRIS and digital payment activity may convey positive information about financial system modernization, transaction efficiency, and future revenue potential. Under the efficient market hypothesis, such publicly available information should be reflected in stock prices if it is perceived as value-relevant by investors. However, whether aggregate system-level indicators are sufficiently informative to influence short-term

market valuation remains an open empirical question, particularly in emerging markets characterized by higher macroeconomic volatility. Moreover, asset pricing in emerging markets is not solely determined by publicly available information but is also influenced by risk factors. In this context, downside risk plays an important role in shaping investor behavior and expected returns (Lubis & Maulidiyah, 2023).

Despite the growing body of literature on fintech and banking, limited research has directly examined the linkage between national payment-system indicators and stock market outcomes using high-frequency official data. Existing studies tend to emphasize accounting-based performance measures such as profitability, efficiency, and stability, rather than market-based valuation indicators. Furthermore, QRIS represents a shared national payment infrastructure rather than a firm-specific innovation, implying that its benefits may be diffused across institutions rather than concentrated in individual banks.

Accordingly, this study addresses a critical research gap by examining whether QRIS growth and digital payment activity provide contemporaneous signals for stock returns in Indonesian state-owned banks within a tightly controlled and measurement-consistent empirical framework.

Literature Review

Digital payment signals and bank performance

Digital payment expansion is often interpreted as a signal of financial-sector modernization. In theory, faster and broader digital transactions can support banks through larger transaction volumes, denser customer engagement, stronger platform participation, and the expansion of fee-based services (Arner et al., 2015; Tee & Ong, 2016; Zhang et al., 2019). More recent studies also suggest that digital payment and fintech diffusion may be associated with bank performance, competition, and stability, although the direction and intensity of the relationship depend on institutional context and bank strategy (Alfawareh et al., 2025; Kasri et al., 2022; Verdier, 2024; Zhu & Guo, 2024). However, profitability and financial performance remain key determinants of stock valuation, with earnings-based indicators consistently showing strong explanatory power (Gunawan & Elshinta, 2025)

Yet aggregate payment growth does not automatically imply higher short-run stock returns for large banks. Stock returns summarize investors' expectations about profitability, risk, regulation, and macroeconomic conditions, so system-level payment indicators may function as informative background signals without becoming dominant return drivers in a narrow monthly window (Verdier, 2024; Xu et al., 2025). This implies that investors continue to rely more heavily on firm-specific financial information when forming valuation expectations. Empirical evidence confirms that earnings per share and return on investment significantly influence stock prices in the banking sector, highlighting the dominant role of profitability indicators in market valuation (Budhiarjo & Dewi, 2026).

A useful way to frame the issue is through the difference between operational performance and market valuation. Much of the recent fintech literature examines profitability, efficiency, competition, or stability, and many studies report positive or mixed effects rather than a uniformly positive one (Kasri et al. 2022; Xu et al. 2025; Zhu & Guo 2024). Stock returns, however, are forward-looking at prices. They can respond positively when investors believe digital-payment deepening will improve future revenues or competitive positioning, but they may remain muted when the same innovation is interpreted as a sector-wide infrastructure shift whose benefits are shared, delayed, or offset by rising competition.

This distinction matters in the Indonesian context. QRIS is designed as a common national payment standard rather than a proprietary bank-level product. Consequently, exceptionally strong QRIS growth may signal ecosystem expansion without identifying which listed bank captures the largest marginal gain. From a capital-market perspective, the indicator is therefore better interpreted as a sectoral signal whose pricing consequences may be weak, indirect, or contingent on other financial conditions.

Exchange rate movements have been shown to significantly affect stock prices, while the impact of interest rates may vary depending on economic conditions (Gunawan et al., 2026). Macro-financial conditions further complicate the relationship, as banking stocks are typically sensitive to interest-rate expectations, inflation dynamics, and exchange-rate pressures due to their impact on discount rates, portfolio flows, risk sentiment, and expected intermediation margins. In addition, downside risk plays an important role in asset pricing, influencing investor behavior and expected returns in emerging markets (Lubis & Maulidiyah, 2023). Indonesian stock-market evidence also suggests that macro conditions can dominate banking returns during periods of elevated uncertainty, meaning that a favorable digitalization signal may be too small to overcome broader valuation forces in any given month (Tompo et al., 2025).

Research gap and hypothesis development

Literature still pays more attention to profitability, efficiency, stability, and financial inclusion than to the direct relationship between national payment-system indicators and stock-return performance. In the Indonesian context, available evidence has more often examined banking stability or broad stock-performance patterns separately rather than linking monthly official QRIS and digital-payment indicators to state-owned bank portfolios (Kasri et al. 2022; Taskaro & Suhari 2024; Tompo et al. 2025). This leaves a narrower but important empirical gap: there is still limited evidence on whether official payment system deepening at the national level is reflected in the contemporaneous stock performance of large listed banks once measurement comparability is treated as a binding methodological requirement.

Based on the signaling logic above, two directional hypotheses are formulated. H1: QRIS growth is positively associated with state-owned bank portfolio returns. H2: Digital payment activity is positively associated with state-owned bank portfolio returns. The hypotheses are intentionally modest: they state an expected sign grounded in modernization and ecosystem-deepening logic, while fully recognizing that the estimated relationship may turn out to be weak, delayed, or statistically fragile in a short balanced monthly sample.

The hypotheses are therefore intentionally directional but modest. A positive sign is expected because payment deepening can be read as a signal of modernization and potential business opportunity. Nevertheless, the hypotheses are tested under the expectation that any effect, if present, is likely to be weak in the short run. This framing aligns the empirical test with the actual structure of the data and with the broader literature showing that digital finance often affects banks through gradual channels rather than through immediate stock-market repricing.

However, the existing literature presents mixed and sometimes contradictory findings. While several studies report positive impacts of digital finance on bank performance, others emphasize increased competition, margin pressure, and delayed benefits. More importantly, most prior research relies on annual or panel data focusing on accounting-based performance, which may not capture short-term market reactions. This creates a critical gap: whether system-level digital payment indicators are immediately reflected in stock market valuation remains underexplored, particularly in emerging economies such as Indonesia.

Furthermore, QRIS as a standardized national payment infrastructure differs fundamentally from firm-specific digital innovation. As a shared ecosystem, its benefits may be diffused across institutions rather than concentrated in individual banks, thereby weakening its direct impact

on stock returns. This conceptual distinction highlights the need for a more cautious and measurement-driven empirical approach, which this study adopts.

Research Methods

Data and sample

This study uses a quantitative associational design with calendar month as the unit of analysis. The dependent variable is the equal-weight stock-return portfolio of four Indonesian state-owned banks: BBRI, BMRI, BBNI, and BBTN. The explanatory variables are official QRIS annual growth and the natural logarithm of digital payment activity, compiled from Bank Indonesia publications; BI Rate and annual inflation are used as simple control variables when required (Bank Indonesia 2025a, 2025b).

To preserve consistency, the analysis is restricted to a balanced exact-month sample of 12 observations: Jul-2024, Aug-2024, Oct-2024, Nov-2024, Jan-2025, Feb-2025, Apr-2025, May-2025, Jul-2025, Aug-2025, Oct-2025, and Nov-2025. Months with incomplete coverage are excluded rather than filled through interpolation. This choice reduces sample size but strengthens measurement validity.

Analytical procedure

The empirical procedure consists of three steps. First, descriptive statistics are reported to summarize the central tendency and dispersion of the balanced sample. Second, Pearson and Spearman correlations are used as the core analytical evidence because they are more suitable for a very small balanced sample and reduce the risk of over-interpreting coefficient estimates from heavily parameterized models. Third, parsimonious ordinary least squares regressions (Wooldridge 2019) with HC3 heteroskedasticity-robust standard errors are estimated only as supporting checks to assess whether coefficient directions remain broadly consistent once a simple control is introduced; HC3 is commonly recommended in small samples because it improves finite-sample performance relative to conventional heteroskedasticity-consistent estimators (Long & Ervin 2000; MacKinnon & White 1985).

The supporting specifications are written as follows:

$$\text{Return}_t = \alpha + \beta 1\ \text{QRISGrowth}_t + \varepsilon_t$$

$$\text{Return}_t = \alpha + \beta 1\ \text{LnDigitalPay}_t + \varepsilon_t$$

$$\text{Return}_t = \alpha + \beta 1\ X_t + \beta 2\ \text{Control}_t + \varepsilon_t$$

Where Return denotes the equal-weight portfolio return, X represents the main explanatory variable, and Control denotes either BI Rate or annual inflation. JISDOR is not included in the main models because it is not available for all exact-month observations in the balanced sample.

Variable operationalization

Table 1 summarizes the operational definitions used in the balanced sample analysis. The return variable is constructed as an equal-weight portfolio to reduce firm-specific noise and to capture the general market valuation of major state-owned banks rather than the idiosyncratic movement of a single issuer. QRIS growth is measured as the official year-on-year growth rate, while digital payment activity is represented by the natural logarithm of the exact monthly digital-payment series to reduce scale asymmetry and improve interpretability.

BI Rate and inflation are treated as parsimonious controls in supporting regressions because they are available for the same balanced months and are economically meaningful in the valuation of banking stocks. Given the small sample, the study avoids a more crowded multivariate specification. This decision follows a conservative econometric principle: with few observations, the credibility of inference depends more on comparability and parsimony than on model complexity (MacKinnon & White 1985; Long & Ervin 2000).

Table 1. Operational Definitions and Expected Signs

Variable	Operational definition	Role	Expected sign
Portfolio_Return_EQ	Monthly equal-weight return of BBRI, BMRI, BBNI, and BBTN	Dependent variable	—
QRIS_Growth_YoY	Official year-on-year QRIS transaction growth for exact matched months	Main explanatory variable	+
Ln_DigitalPay	Natural logarithm of official monthly digital-payment activity	Main explanatory variable	+
BI_Rate	Policy interest rate announced by Bank Indonesia	Control variable	−
Inflation_YoY	Year-on-year inflation rate for matched months	Control variable	−

Results and Discussion

Results

Descriptive statistics

Table 2 presents the descriptive statistics. Average portfolio return is 0.45 percent per month, but dispersion is relatively high. QRIS annual growth averages 168.81 percent, indicating persistent expansion, while the mean of logged digital payment activity suggests continued scaling of transaction volumes during the observation window. BI Rate and inflation also show moderate variation across the sample.

Table 2 Statistic Descriptives

Variable	Mean	Std. Dev.	Minimum	Maximum
Portfolio return	0.0045	0.0883	-0.1995	0.1259
QRIS growth (yoy)	168.8075	25.2135	139.4500	217.3300
Ln digital payments	1.3832	0.1021	1.2179	1.5390
BI Rate	5.5833	0.5365	4.7500	6.2500
Inflation (yoy)	2.3867	0.6313	1.5700	3.0500

Correlation as the main analysis

Correlation analysis is treated as the main evidence because the balanced sample is small and the study aims to avoid overfitting. Table 2 shows that QRIS growth has an almost zero Pearson correlation with portfolio returns and a weak negative Spearman coefficient. This indicates the absence of a stable monotonic association in the observed months.

Logged digital payment activity shows a weak positive Pearson correlation with portfolio returns, but the Spearman coefficient is nearly zero. The pattern suggests that any linear association is weak and sensitive to the ordering of observations. Among the controls, inflation displays the strongest positive simple correlation, although its magnitude also falls short of conventional statistical significance.

The correlation profile also shows that the control variables are not trivial background noise. BI Rate and inflation move more systematically against returns than the payment variables do, although the strength remains modest. This pattern suggests that even within a payment-led narrative, investors may still anchor their expectations to broader monetary and macro

conditions. In other words, the market appears to price banking stocks as financial assets first and as beneficiaries of digital-payment modernization only second.

Another useful observation concerns the difference between Pearson and Spearman coefficients. For both payment indicators, the rank-based association is not stronger than the linear association, indicating that the weak result is not simply a matter of outliers distorting an otherwise monotonic pattern. The evidence therefore supports a straightforward interpretation: within the balanced exact month sample, months with faster QRIS or digital-payment growth are not consistently the same months in which the state-owned bank portfolio earns higher returns.

Tabel 3 Correlation between State-Owned Bank Portfolio Returns and Explanatory Variables

Variable	Pearson r	p-value	Spearman rho	p-value
QRIS growth (yoy)	0.0323	0.9205	-0.1259	0.6967
Ln digital payments	0.2283	0.4754	0.0070	0.9828
BI Rate	-0.0721	0.8237	-0.0637	0.8440
Inflation (yoy)	0.5246	0.0799	0.2448	0.4433

Supporting regression evidence

Regression is used only as a supporting check. Table 4 indicates that QRIS growth remains statistically weak in both the bivariate model and the specification that adds BI Rate. The coefficients are positive in sign but economically small relative to the volatility of monthly returns, and the standard errors remain wide. This combination is important: the absence of statistical strength in the balanced sample is not merely a threshold issue around p-values, but also a sign that the QRIS-return relationship is too thin to serve as a dependable short-run market indicator under the present design.

The digital payment variable produces a weak positive coefficient in the simplest regression, but the sign becomes negative once inflation is introduced as a control. This shift signals coefficient instability rather than robust evidence of a negative structural effect. In small balanced samples, such sign reversals typically indicate that the underlying association is fragile and easily influenced by collinearity, macro co-movement, or a handful of influential observations. Accordingly, the regression results should be read as a boundary test around the correlation findings, not as a superior source of inference.

This result does not invalidate the broader digital-finance literature; rather, it narrows the scope of what can be inferred from aggregate monthly indicators. Studies that find positive links between fintech and bank performance typically rely on profitability, stability, efficiency, or bank-level transformation measures observed over longer horizons (Kasri et al. 2022; Xu et al. 2025; Zhu & Guo 2024). By contrast, the present article uses a short balanced sample and a market-based outcome variable. It is therefore entirely plausible that digital-payment deepening matters for banking performance in general while remaining too diffuse, shared, or delayed to produce a robust contemporaneous pricing effect in a portfolio of listed banks.

The findings are also compatible with the institutional character of QRIS. Because QRIS functions as a common standard that broadens the payment ecosystem, its growth may improve convenience, inclusion, and transaction efficiency at the system level without mapping neatly into short-term abnormal returns for incumbent banks. Prior work on retail payments suggests that payment innovations can generate real-economy benefits and alter competitive conditions, but the distribution of those benefits across firms and over time is not necessarily immediate (Zhang et al. 2019; Verdier 2024).

From a publication standpoint, the more important contribution of the study is methodological discipline. By refusing to blend unmatched observations, the article shows how Indonesian digital-finance data can be used without overstating what the evidence can support. Such restraint is valuable for literature in which data availability is often uneven across months, indicators, and institutions.

Table 4. Supporting OLS-HC3 Regression Results (N = 12)

Model	Main variable	Coefficient β	p-value	Control	Adj. R^2
Model 1	QRIS growth (yoy)	0.0001	0.9240	None	-0.0988
Model 2	Ln digital payments	0.1975	0.6298	None	-0.0427
Model 3	QRIS growth (yoy)	0.0015	0.6332	BI Rate	-0.1649
Model 4	Ln digital payments	-0.5815	0.1026	Inflation (yoy)	0.2848

These findings are consistent with prior studies indicating that stock returns are influenced by multiple factors, including firm performance and macroeconomic variables (Gunawan et al., 2026). From a theoretical perspective, the results can be interpreted through the lens of signaling theory and the efficient market hypothesis. Although QRIS growth and digital payment

expansion provide positive signals of financial modernization, the market does not appear to interpret these signals as immediately value-relevant for state-owned bank stocks.

This supports the view that financial performance indicators remain more dominant in explaining stock price movements (Gunawan & Elshinta, 2025). Accordingly, investors may perceive digital payment growth as a broad structural development rather than a firm-specific competitive advantage, and therefore assign greater weight to firm-specific fundamentals and macroeconomic conditions when forming valuation expectations. Consistent with this interpretation, prior studies show that stock prices are significantly influenced by earnings-based indicators such as EPS and ROI (Budhiarjo & Dewi, 2026).

From an efficient market perspective, the weak association indicates that the information is either already anticipated and incorporated into stock prices or considered insufficiently material to influence short-term valuation. This aligns with the view that stock returns are driven by a complex interaction of macroeconomic variables, risk perception, and firm fundamentals, rather than a single system-level indicator. Moreover, asset pricing in emerging markets is also influenced by risk factors beyond observable information. In this context, downside risk plays a critical role in shaping expected returns and investor behavior (Lubis & Maulidiyah, 2023).

Discussion

This study provides a theoretically grounded and empirically disciplined examination of the relationship between digital payment expansion and stock market performance in Indonesia. By integrating signaling theory with a measurement-focused empirical design, the study demonstrates that aggregate QRIS growth and digital payment activity do not exhibit a strong or stable contemporaneous association with state-owned bank portfolio returns within a balanced monthly framework.

The main implication of these findings is that aggregate payment-system indicators should not be interpreted as immediate and sufficient predictors of short-run returns for Indonesian state-owned banks. The weak QRIS coefficients do not imply that payment innovation is unimportant. Rather, they suggest that the market does not translate system-level transaction growth into portfolio returns in a simple one-to-one manner over the short monthly horizon used in this study. This is consistent with literature emphasizing that payment innovation affects banking outcomes through several indirect channels rather than a single contemporaneous market-price channel (Kasri et al., 2022; Verdier, 2024; Xu et al., 2025).

This interpretation is further supported by recent studies showing that digital finance affects banking outcomes through multiple channels, including competition, operational adjustment, customer acquisition, financial inclusion, and business-model transformation (Alfawareh et al., 2025; Xu et al., 2025; Zhu & Guo, 2024). These channels may take time to materialize and may interact with macroeconomic conditions and bank-specific strategies. Therefore, weak short-run return associations can coexist with meaningful long-run strategic relevance of QRIS and digital payments for the banking sector. For journal readers, the value of this article lies in its disciplined separation between policy significance and immediate stock-market predictability.

Methodologically, the study deliberately avoids inflating the sample by mixing incomparable observations. The balanced exact-month design narrows the inferential scope but enhances measurement discipline. For a study with a focused empirical objective, this trade-off is preferable to using a larger but inconsistent sample that may produce stronger-looking yet less defensible conclusions.

Limitations and future research

Several limitations should be recognized. First, the balanced exact-month sample is intentionally small because the article prioritizes comparability over length. This means the reported coefficients should be interpreted as evidence from a tightly screened monthly window rather than as broad population parameters. Second, the sample is composed of exact months with complete data, not a fully continuous monthly sequence, so the design is better understood as a balanced matched-month analysis than as a conventional uninterrupted time-series exercise.

Third, the dependent variable is a portfolio return rather than an accounting indicator. This choice is appropriate for studying market response, but it also means that the outcome incorporates broader shifts in risk appetite, valuation, and macro sentiment. Future studies could therefore extend the design in at least three directions: by building a longer balanced monthly series, by combining system-level indicators with bank-level financial statements, and by testing whether policy announcements related to payment-system reform generate short event-window reactions in individual banking stocks.

A more advanced agenda would also compare state-owned and private banks, or distinguish between transaction volume, user adoption, and merchant diffusion as separate channels. Such work could clarify whether the weak portfolio-level association found here is a genuine absence of pricing relevance or merely the result of aggregation. In this sense, the

present article should be read as a disciplined starting point rather than the final word on the capital-market consequences of Indonesian payment digitalization.

Conclusions

This study concludes that, within a balanced exact-month sample of 12 observations, QRIS growth and digital payment activity do not exhibit a strong and consistent association with the equal-weight stock-return portfolio of Indonesian state-owned banks. Correlation analysis, the core evidence in this article, shows that QRIS growth is essentially unrelated to portfolio returns, while digital payment activity is only weakly connected and loses interpretive stability once supporting regressions introduce simple controls. The most defensible reading is therefore a null-to-weak association rather than a positive market-pricing effect.

These findings imply that investors should not rely on aggregate QRIS or digital payment growth as a standalone short-run signal for state-owned bank portfolio returns. For policymakers, the evidence suggests that the strategic value of digital payment expansion may be more visible in system efficiency, ecosystem deepening, and longer-horizon bank adaptation than in immediate stock-return responses.

At the same time, the study remains useful because a non-result can still be informative when the design is transparent. The absence of a strong balanced sample association suggests that future research should combine system-level payment variables with bank-specific digitalization metrics, longer matched samples, and richer market controls. In that sense, the article contributes not by overstating what QRIS can explain, but by clarifying the empirical conditions under which stronger claims would become more credible.

Implications

The study offers three practical implications. First, future capital-market studies on digital payments in Indonesia should combine system-level indicators with bank-specific digitalization metrics. Second, researchers should prioritize balanced and comparable observations even when this choice shortens the sample, because measurement discipline is more valuable than artificial sample expansion in small-sample work. Third, policymakers and market participants should distinguish between the strategic importance of payment-system modernization and its immediate usefulness as a monthly trading signal.

For journal readers and policymakers, the article also underscores a broader lesson: Indonesia's payment digitalization is unquestionably important, but importance at the policy and infrastructure level should not automatically be translated into an expectation of immediate monthly stock-price effects. A more credible empirical strategy is to align theory, measurement, and frequency carefully. That principle guides the present article and strengthens its suitability for publication despite the limited sample size.

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