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The Effect of Qris Transaction Volume and Nominal Value on Indonesia's Economic Growth for the Period 2020-2024

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ABSTRACT
This study examines the effect of QRIS transaction volume and nominal value on Indonesia's economic growth from 2020 to 2024. The rapid increase in QRIS usage, reaching 6.24 billion transactions worth IDR 659.9 trillion in 2024, motivated this research. A quantitative field research approach was employed, using documentation techniques from Bank Indonesia, ASPI, and BPS annual reports. Multiple linear regression analysis with SPSS 25 was conducted. The results show that QRIS transaction volume and nominal value do not have a significant effect on Indonesia's economic growth during the study period. The R-square value of 0.045 indicates that only 4.5% of economic growth variation can be explained by both variables, while 95.5% is influenced by other factors. These findings suggest that the substitution effect dominates QRIS transactions, primarily relocating existing transactions rather than creating new economic activity.

Keywords: QRIS, transaction volume, nominal value, economic growth, Indonesia.

ABSTRAK
Penelitian ini menguji pengaruh volume dan nilai nominal transaksi QRIS terhadap pertumbuhan ekonomi Indonesia periode 2020-2024. Peningkatan pesat penggunaan QRIS yang mencapai 6,24 miliar transaksi senilai Rp 659,9 triliun pada tahun 2024 menjadi motivasi penelitian ini. Pendekatan penelitian lapangan kuantitatif digunakan dengan teknik dokumentasi dari laporan tahunan Bank Indonesia, ASPI, dan BPS. Analisis regresi linear berganda dengan SPSS 25 dilakukan. Hasil penelitian menunjukkan bahwa volume dan nilai nominal transaksi QRIS tidak berpengaruh signifikan terhadap pertumbuhan ekonomi Indonesia. Nilai R-square sebesar 0,045 mengindikasikan bahwa hanya 4,5% variasi pertumbuhan ekonomi yang dapat dijelaskan oleh kedua variabel tersebut, sementara 95,5% dipengaruhi oleh faktor lain. Temuan ini menunjukkan bahwa efek substitusi mendominasi transaksi QRIS, yang sebagian besar memindahkan transaksi yang sudah ada daripada menciptakan aktivitas ekonomi baru.

Kata kunci: QRIS, volume transaksi, nilai nominal, pertumbuhan ekonomi, Indonesia .

INTRODUCTION

The rapid development of modern payment technology adoption is key to strengthening economic competitiveness and inclusion in Indonesia. The payment system created is able to transcend geographical and social limitations, enabling people to access financial services easily and quickly (Bank, 2021). As a form of digital payment innovation in Indonesia, Bank Indonesia (BI), as the central bank, launched the Quick Response Code Indonesia Standard (QRIS) on August 17, 2019, and it has been officially in use since January 1, 2020 (Bank Indonesia, 2019). To date, the increasing use of QRIS has demonstrated the widespread adoption of cashless transactions (Sari, 2024).

The presence of QRIS has had a significant impact on the transformation of the financial system and has become a gateway for the public to access more modern and inclusive financial services (Ali & Sendjaja, 2025). By constantly observing how technological advances are taking place, the potential risks that may arise from these innovations can be identified (Hardiyanti & Santosa, 2024). This technological development has resulted in advanced innovations that are used as state facilities and provide convenience in their use (Desfikasari et al., 2024).

The Indonesian Payment System Association (ASPI) reported a significant increase by 2024, with a transaction volume of 6.24 billion and a transaction value of IDR 659.9 trillion (Hali et al., 2025). In addition, QRIS also helps businesses improve their financial management, as it provides automatic and organized transaction records, thereby helping to maximize cash flow management (Khairani et al., 2025). Launched right after the pandemic, the mass adoption of QRIS was marked by a surge in transactions, which contributed significantly to the doubling of the aggregate consumption effect (Hardiyanti & Santosa, 2024). Based on the phenomenon described above, no previous research has discussed the empirical relationship between the volume and nominal value of QRIS transactions and Indonesia's economic growth. Therefore, this study aims to examine the extent to which the volume and nominal value of QRIS transactions influence Indonesia's economic growth in the 2020-2024 period.

This study examines the impact of growth in the volume and value of QRIS transactions on Indonesia’s economic growth (measured by GDP) during the 2020–2024 period using time-series approaches, such as regression or econometric models that account for post-pandemic dynamics. This study fills a gap by providing evidence of macro-level causality at the national scale, utilizing data on the surge in QRIS transactions to 6.24 billion in volume and Rp659.9 trillion in value by 2024. This provides an original contribution to Bank Indonesia’s policy efforts in measuring the multiplier effect of QRIS on financial inclusion and sustainable economic recovery.

THEORETICAL BACKGROUND

2.1. QRIS Transaction Volume

QRIS transaction volume is the number or frequency of transactions conducted through QRIS during a specific period, ranging from payments or transfers between users or merchants (QRIS Interactive, 2025). One transaction is counted for each successful scan and is measured in

millions or billions of transactions per month, per quarter, or per year. The higher the QRIS transaction volume, the wider the adoption and utilization of this digital payment system by the public and businesses, both at the MSME level and in other business sectors (Bank Indonesia, 2023).

2.2. QRIS Transaction Amount

The QRIS transaction amount is the specific value in Indonesian Rupiah (IDR) paid or transferred in a single transaction event through QRIS as a payment system. The amount is the monetary value of a single transaction made for a payment, calculated gross before fee deductions and includes both QRIS static and dynamic (Bank Indonesia, 2020).

2.3. Economic Growth

Economic growth is the percentage increase in Gross Domestic Product (GDP) based on constant national prices (ADHK) over a specific period of time, such as monthly, quarterly, or annually (BPS, 2025). Economic growth reflects the performance of the national economy and is a key indicator in assessing the success of a country's economic development (Rosyda, 2025).

2.4. Irving Fisher's Quantity Theory of Money

Irving Fisher formulated that the nominal transactions in an economy are influenced by the amount of money in circulation and the velocity of money through the exchange equation (Fisher, 1991). The increase in the volume and nominal value of QRIS transactions was accompanied by an increase in the productivity of the real sector and MSMEs. Therefore, the current phenomenon is in line with the theory developed by Irving Fisher (Fisher, 1991).

2.5. Endogenous Economic Theory

The phenomenon aligns with the endogenous economic theory by Romer (1990), which is relevant to this phenomenon. This theory emphasizes that economic growth is not only influenced by external factors but also emerges from the economic system or internal factors. The application of endogenous growth theory can be seen in the contribution of SMEs to 60.5% of the national GDP, where digital payment has become an internal driver of growth through increased access to digital markets and financing (Ministry of Finance, 2023).

RESEARCH METHODS

The type of research used is *field research* with a quantitative descriptive approach. The quantitative approach was chosen because the data used consists of numbers that can be measured and analyzed using descriptive statistical techniques, such as averages, percentages, and growth rates , in order to obtain an empirical picture of the contribution and development of digital payment systems to the national economy (Narbuko & Achmadi, 2021).

This study uses a sample of 60 months of data from a five-year observation period, covering time-series data from 2020 to 2024 sourced from official institutions such as Bank Indonesia (BI), the Indonesian Payment Systems Association (ASPI), and the Central Statistics Agency (BPS). This sample consists of statistics on the volume and nominal value of QRIS transactions collected through documentation techniques from annual reports and statistical publications,

as well as the growth rate of Gross Domestic Product (GDP) at constant prices as an indicator of national economic growth.

The data collection technique used in this study is the documentation technique, which involves collecting data from annual reports, statistical publications, and online databases published by Bank Indonesia, ASPI, and the Central Statistics Agency (Sugiyono, 2019) . The data analysis techniques used in this study are classical assumption tests (normality test, multicollinearity test, heteroscedasticity test, autocorrelation test), multiple linear regression analysis techniques, and hypothesis testing (t-test and F-test).

RESULT AND DISCUSSION

Table 1. Multiple Linear Regression Test Output

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.988	2.662		-.371	.712
	Log_X1	.345	1.798	.095	.192	.849
	Log_X2	.363	1.515	.119	.240	.811
a. Dependent Variable: Indonesia's Economic Growth						

Source: Secondary data processed with SPSS 25 (2025)

$$Y = \alpha + b1X1 + b2X2 + e$$

$$Y = (-0.988) + 0.345X1 + 0.363X2 + e$$

Based on the output, it can be concluded that the constant (α) has a coefficient value of -0.988, the regression coefficient of the QRIS transaction volume variable (X1) has a regression coefficient value of 0.345, and the regression coefficient of the QRIS nominal transaction variable (X2) has a regression coefficient value of 0.363.

Table 2. T-test Output

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.988	2.662		-.371	.712
	Log_X1	.345	1.798	.095	.192	.849

	Log_X2	.363	1.515	.119	.240	.811
a. Dependent Variable: Indonesia's Economic Growth						

Source: Secondary data processed with SPSS 25 (2025)

The results of the t-test (partial) above show that the significance value of the QRIS transaction volume variable (X1) is 0.849 > 0.05 (in accordance with the significance level), and the regression calculation results obtained a t-value of -0.192. Therefore, it can be concluded that the QRIS transaction volume variable does not have a significant effect on Indonesia's economic growth in 2020-2024. The results of the t-test (partial) above show that the significance value of the QRIS nominal transaction variable (X2) is 0.811 > 0.05 (in accordance with the significance level), and the regression calculation results obtained a t-value of 0.240. Therefore, it can be concluded that the nominal QRIS transaction variable does not have a significant effect on Indonesia's economic growth in 2020-2024.

Table 3. SPSS F-Test Output

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.233	2	6,617	1,353	.267[b]
	Residual	278,657	57	4,889		
	Total	291,891	59			
a. Dependent Variable: Indonesia's Economic Growth						
b. Predictors: (Constant), Log_X2, Log_X1						

Source: Secondary data processed with SPSS 25 (2025)

Based on Table 4.10, $F_{calculated}$ is 1.353 < F_{table} which is 4.010 and sig 0.267 > 0.05, indicating that the volume and nominal value of QRIS transactions simultaneously have no significant effect on Indonesia's economic growth for the 2020-2024 period.

Table 4. Determination Coefficient Test (R^2)
SPSS Output for the Coefficient of Determination Test (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.213[a]	.045	.012	2.21105
a. Predictors: (Constant), Log_X2, Log_X1				

Source: Secondary data processed with SPSS 25 (2025)

Based on Table 4.11, the *R square* (R^2) result is 0.045, indicating that 4.5% of the economic growth variable (Y) can be explained by the QRIS transaction volume variable (X1) and the QRIS transaction nominal variable (X2). The remaining 95.5% is influenced by other variables not explained in this study.

The Effect of QRIS Transaction Volume on Indonesia's Economic Growth for the Period 2020-2024

The results show that QRIS transaction volume has a coefficient of 0.345 on Indonesia's economic growth. This means that, theoretically, if QRIS transaction volume increases by 1%, Indonesia's economic growth rate will increase by 0.345%. Based on the probability, it was found that the significance of QRIS transaction volume was 0.849 > 0.05, so it can be concluded that QRIS transaction volume does not have a significant effect on Indonesia's economic growth in the 2020-2024 period.

The results of this study are not in line with the research conducted by (Simanjuntak et al., 2024) , which found that QRIS provides significant progress in facilitating digital transactions in Indonesia, and the ease of using QRIS encourages a sustainable increase in the volume of non-cash transactions. This study is inconsistent with research conducted by (Pangestika, 2021) , which found that non-cash payment systems (Card Payment Instruments or APMK and E-Money) have a significant impact on Indonesia's economic growth in the short term. Furthermore, inflation does not have a significant impact on Indonesia's economic growth, either in the short or long term.

Research from (Aminah, 2023) also does not align with this study. The study found that the use of the QRIS payment system had a positive impact of 23.9% on the development of MSMEs in Polewali Mandar Regency, while the remaining 76.1% was influenced by other factors such as human resources, financial or business capital, and good marketing through online and offline media.

These findings are in line with the research (Oktavia et al., 2023) entitled "The Effect of Non-Cash Payments on Economic Growth in Indonesia from 2011 to 2021". Oktavia et al (2023) state that card-based payment systems have been proven to have no positive and significant impact on economic growth, while e-money has not yet shown a significant positive impact on economic growth. This is due to the immaturity of adoption rates, particularly in small cities and rural areas.

This study shows that the volume of QRIS transactions does not have a significant effect on Indonesia's economic growth in the 2020-2024 period. This study explains Irving Fisher's quantity theory of money, which states that the amount of money in circulation is strictly controlled by Bank Indonesia through monetary operations so that it does not experience significant expansion. In Fisher's framework, QRIS increases T (transaction volume), but its

effect on economic output depends on the stability of V (velocity of money) and Bank Indonesia's control of M (money supply).

According to Rogers, early adopters are predominantly found in urban areas, but QRIS has not yet spread evenly to rural and remote areas. Since the launch of the Quick Response Code Indonesia Standard (QRIS), its use has been popular among Gen Z and millennials at around 53%, and among MSMEs in major cities at 82%. Although the volume of QRIS transactions has surged to 6.24 billion transactions and a nominal value of IDR 659.9 trillion, the relative contribution of QRIS transaction volume to real national economic activity is still too marginal (<5% of total domestic transactions). It also has not produced significant changes in the price level and transaction volume of goods and services (aggregate monetary output) that are directly correlated with real GDP.

The Impact of QRIS Transaction Value on Indonesia's Economic Growth for the Period 2020-2024

The results of the study show that the nominal value of QRIS transactions has a coefficient of 0.240 on Indonesia's economic growth. This means that, theoretically, if the nominal value of QRIS transactions increases by 1%, Indonesia's economic growth rate will increase by 0.240%. Based on the probability, it was found that the significance of nominal QRIS transactions was 0.811 > 0.05, so it can be concluded that nominal QRIS transactions did not have a significant effect on Indonesia's economic growth in the 2020-2024 period.

These findings are in line with the research (Oktavia et al., 2023) entitled "The Effect of Non-Cash Payments on Economic Growth in Indonesia in 2011-2021". Oktavia et al (2023) state that card-based payment systems have been proven to have no positive and significant effect on economic growth, while e-money has not yet shown a significant positive effect on economic growth. This is due to the immaturity of adoption rates, particularly in small cities and rural areas.

This study found that the nominal value of QRIS transactions does not significantly impact Indonesia's economic growth for the 2020-2024 period. This also indicates that Irving Fisher's quantity theory of money operates through the substitution mechanism between payment systems. The positive coefficient of 0.363 indicates that the increase in QRIS nominal value of IDR 659.9 trillion replaces transactions such as cash, cards, and interbank transfers. Without changing the total real national economic activity, the aggregate monetary output remains stagnant even though the money supply is controlled by Bank Indonesia. However, the velocity of money has not stabilized due to the concentrated diffusion of QRIS innovation in the urban retail sector.

This phenomenon explains why the nominal value of QRIS transactions reached IDR 659.9 trillion in absolute terms, with a net effect on real GDP of zero because QRIS transactions only relocate rather than increment economic transactions. Thus, it creates additional new

transactions rather than a substitution effect between payment systems. This substitution effect is reinforced by the fixed economic capacity post-pandemic, with limited household consumption capacity, so that payment innovations only optimize the distribution of existing transactions rather than creating new demand. This differs from additional transactions, such as consumer credit expansion or fiscal stimulus, which can shift aggregate and significant price levels and transaction volumes of goods and services. This is evidenced by the 2021 economic growth rebound (5.44%), driven by direct cash assistance (BLT) and mobility recovery, not QRIS alone.

The Impact of QRIS Transaction Volume and Value on Indonesia's Economic Growth for the 2020-2024 Period

The F-test (simultaneous test) results show that the volume and nominal value of QRIS transactions simultaneously (together) do not have a significant effect on Indonesia's economic growth in the 2020-2024 period. This can be seen from the probability (p-value) of the F-test of 1.353 < F-table of 4.010 and sig 0.267> 0.05, indicating that the volume and nominal value of QRIS transactions simultaneously have no significant effect on Indonesia's economic growth in the 2020-2024 period.

The findings of this study validate Irving Fisher's quantity theory of money through the substitution effect mechanism, which is dominant in digital payment innovations. In addition, money in circulation is strictly controlled by Bank Indonesia, and the velocity of money is not yet stable due to the diffusion of QRIS innovations among early adopters in urban areas. QRIS transactions only relocate 76% of transactions from conventional payment systems (cash and cards), without creating significant incremental transactions to the total real national economy.

This phenomenon can also be explained by the fixed capacity of the post-pandemic economy, where Indonesia's ICOR (Incremental Capital Output Ratio) of 6.4 indicates limited real production capacity, so that the increase in QRIS payment efficiency is not followed by real output expansion due to supply-side bottlenecks (labor, infrastructure, supply chains). Unlike the direct cash assistance (BLT) of Rp500 trillion in 2021, the BLT distributed created new demand through fiscal multipliers. ICOR (Incremental Capital Output Ratio) is used to measure investment efficiency by comparing additional capital or investment to produce one additional unit of economic output (Tarumingkeng, 2025) . A high ICOR figure indicates inefficient investment, requiring large amounts of capital to generate economic growth.

The ideal ICOR value is in the range of 3-4, while Indonesia's current ICOR is at 6.4, twice the ideal ICOR value. This also explains why QRIS is not significant for Indonesia's economic growth. Therefore, in order for Indonesia's ICOR to reach the ideal figure, equitable basic infrastructure development can be carried out. Equitable and effective infrastructure can reduce the ICOR by around 1-1.5 within 3 years, due to the possibility of a 30-40% reduction in logistics costs (Supriyantony, 2024) . Additionally, the Online Single Submission Risk Based

Approach (OSS RBA) is a risk-based one-stop online licensing system that has successfully reduced Indonesia's ICOR from 8.6 in 2021 (Maran et al., 2024) .

CONCLUSION

Based on the research findings, it was found that the volume of QRIS transactions did not have a significant impact on Indonesia's economic growth during the post-pandemic period, as indicated by weak regression coefficients and significance levels exceeding conventional thresholds. Therefore, an increase in transaction volume theoretically does not shift the dynamics of economic growth because its effect is close to absolute zero. This is due to the dominance of the substitution effect, where QRIS transactions only represent a small relocation of total national domestic transactions without creating new economic activity. The nominal value of QRIS transactions was found to have no significant effect on the dynamics of national economic growth, even though it reached a very large scale in absolute monetary terms.

The structural reality of Indonesia's post-pandemic economy, with its limited production capacity, dependence on global supply chains, and low financial inclusion in rural areas, limits *the* potential *multiplier effect* of digital innovation. Therefore, the effects of QRIS are clearly visible and fragmented at the micro level, such as increased efficiency in urban MSMEs or the modern retail sector. Thus, policy interventions are needed, such as accelerating national digital infrastructure and financial literacy programs.

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