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The Impact of the Acceleration of Digital Payments (QRIS) on the Velocity of Money and Inflation in Indonesia

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ABSTRACT

This study aims to analyze the impact of the acceleration of digital payments through the *Quick Response Code Indonesian Standard* (QRIS) on the velocity of money and inflation in Indonesia during the 2020–2025 period. This study employs an explanatory quantitative approach using quarterly time-series secondary data obtained from official publications of Bank Indonesia and Statistics Indonesia. The variables analyzed include the value of QRIS transactions, velocity of money, inflation, broad money supply (M2), Gross Domestic Product (GDP), and the BI Rate. The analytical method used is the *Vector Error Correction Model* (VECM), preceded by stationarity testing, optimal lag selection, the Johansen cointegration test, Granger causality testing, and model stability testing.

The results indicate that, in the long run, QRIS has a negative and significant effect on the velocity of money, while in the short run its effect is not significant. Regarding inflation, in the long run the BI Rate and QRIS have a negative and significant effect, M2 has a positive and significant effect, and GDP has a negative and significant effect. In the short run, only GDP at the first lag is proven to have a positive and significant effect on inflation, while the BI Rate, QRIS, and M2 do not show significant effects. These findings indicate that the acceleration of payment system digitalization through QRIS has implications for monetary dynamics, particularly for the velocity of money and inflation in the long run in Indonesia.

Keywords: QRIS, velocity of money, inflation, M2, policy interest rate, VECM.

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INTRODUCTION

The development of digital technology has fundamentally changed the way people conduct economic transactions in Indonesia. One of the main benefits of financial digitalization is that it provides wider access to financial services[1]. The digitalization of payment systems is driving a shift from the use of currency to electronic-based non-cash transactions that are faster, more efficient, and well-documented. The development of digital technology has fundamentally changed the way people conduct economic transactions in Indonesia. One of the main benefits of financial digitalization is that it provides wider access to financial services. The digitalization of payment systems is driving a shift from the use of currency to electronic-based non-cash transactions that are faster, more efficient, and well-documented. The acceleration of digital payment systems is part of broader economic digitalization, which has been shown to improve economic performance through lower transaction costs, faster information flows, wider market access, and stronger financial intermediation mechanisms[2]. In this context, one of the important innovations is the Quick Response Code Indonesian Standard (QRIS) launched by Bank Indonesia as a national standard for QR code-based payments to simplify various payment channels into one integrated code.

QRIS was officially introduced by Bank Indonesia on 17 August 2019 and came into effect nationwide on 1 January 2020 as the single standard for QR code-based payments. Thus, the 2020–2025 period includes not only the digital payment acceleration phase, but also the Initial and post-QRIS

[1] Lsstari et al., *Tantangan dan Peluang Transformasi Bank Sentral di Era Digital*.
[2] Prasetyo Yuli Usaid, "The Impact of Digitalization and Higher Education in Improving Trade Performance in Southeast Asia with the Mediating Role of Private Sector Financing," *Journal of Social Work and Science Education* 7, no. 2 (2026): 1686–1700, https://doi.org/10.52690/jswse.v7i2.1477

phases, thus allowing for a more comprehensive analysis of changes in the rate of money turnover and inflation before and after the digitization of the payment system through QRIS[3]

Since its widespread introduction, the use of QRIS has experienced very rapid growth, both in terms of the number of merchants, transaction volume, and transaction value. The increase in the adoption of QRIS not only makes it easier for consumers and business actors to transact, but also has the potential to change the pattern of money circulation in the economy. The switch from cash to non-cash transactions can affect the speed of money transfer from one economic actor to another, which is reflected in the velocity of money rate indicator.

In monetary theory, the rate of money turnover is one of the important variables that describes how often money changes hands in a given period[4]. Changes in the rate of money circulation, along with the money supply, will affect real economic activity as well as price levels. As transactions become faster and more practical through digital payments, there is a possibility that the speed of money turnover increases, which in turn could have implications for inflation dynamics. However, the direction and magnitude of these influences are not always simple, as they are also influenced by other factors such as monetary policy, inflation expectations, and market structure.

For monetary authorities such as Bank Indonesia, the acceleration of digital payments presents both opportunities and challenges. On the one hand, increasingly rich digital transaction data can be used to improve the accuracy of monitoring monetary conditions and payment systems. On the other hand, a change in the transaction structure from cash to non-cash has the potential to change the transmission of monetary policy and the traditional relationship between the money supply, the rate of money turnover, and inflation. This is very relevant in an effort to maintain the stability of the rupiah value and control inflation to remain within the set target range.

Although various studies have examined the impact of non-cash payments on economic growth and financial inclusion, studies that specifically examine the impact of the accelerated use of QRIS on the rate of money turnover and inflation in Indonesia are still relatively limited. In fact, QRIS is now one of the main instruments in the retail payment ecosystem and is widely used by MSME actors and individual consumers. The limitations of this study create a research gap related to the extent to which the acceleration of QRIS contributes to changes in monetary dynamics, especially in the variables of the rate of money turnover and inflation[5].

Various studies show that QRIS as the national standard QR code has become an important pillar in the digitalization of the payment system in Indonesia, especially because of the convenience, speed, and efficiency it offers for consumers and business actors, including MSMEs. Descriptive and empirical research generally highlights that the use of QRIS is able to increase transaction efficiency, reduce costs, speed up the payment process, and encourage the expansion of financial inclusion.

A number of studies have also examined factors influencing the adoption of QRIS, such as the perception of convenience, benefits, security, and financial and digital literacy, both among consumers and MSME actors. These results generally indicate that the increasing adoption of QRIS has the potential to change people's financial behavior, among other things by encouraging more frequent transactions and reducing psychological barriers in spending (pain of paying), which in turn can have an impact on money circulation patterns and consumption tendencies.

The latest bibliometric study shows that the main theme of QRIS research so far is still concentrated on the issue of financial inclusion, payment efficiency, and technological adaptation in the MSME sector, while studies that directly link QRIS to macro monetary variables such as the rate of money turnover and inflation are still relatively limited. This corroborates the existence of research gaps that can be filled through empirical analysis of the impact of QRIS acceleration on monetary indicators at the macro level.

Research that specifically analyzes the relationship between the use of QRIS and the rate of money turnover in Indonesia shows that QRIS can affect the velocity of money in the long run. Using quarterly time series data and econometric approaches such as the Error Correction Model, the study's

[3] Pemkot Malang, *Bank Indonesia Luncurkan QRIS*.
[4] Fazri Mohehu, *Kecepatan: Perubahan Haluan yang Menghidupkan Harapan*.
[5] Bank Indonesia, *QRIS JELAJAH INDONESIA 2025 MENDORONG DIGITALISASI DENGAN WISATA BUDAYA*.

findings indicate that the increase in the use of QRIS correlates with changes in the rate of money turnover, thus having implications for the effectiveness of monetary policy[6].

However, the observation period in existing research is generally still relatively short and focuses on the initial phase of QRIS implementation, and has not explicitly linked changes in the rate of money turnover due to QRIS with inflation dynamics more broadly. Thus, research that extends the observation period and simultaneously includes inflation variables has the potential to provide a more comprehensive picture of the impact of payment digitalization on monetary stability.

International and domestic literature on digital payments and monetary variables shows that an increase in non-cash transactions can affect the demand for money, the rate of money turnover, and the transmission of monetary policy. Theoretically, changes in the way people transact from cash to digital could change the speed of money circulation as well as affect the relationship between the money supply, output, and price levels.

In Indonesia, a number of studies related to non-cash transactions and macro indicators show that the development of non-cash payment instruments, such as cards and emoney, is related to economic growth, financial system stability, and inflation dynamics, although the results often vary depending on the period, model, and control variables used. This confirms the need for more specific follow-up research on QRIS as a relatively new and rapidly developing digital payment instrument.

The payment system is an important infrastructure in the economy that facilitates the transfer of funds from one party to another, and its efficiency affects the smooth running of economic activity as a whole. Digitizing payment systems, through instruments such as QRIS, e-money, and mobile banking, improves transaction efficiency and speed, reduces costs, and expands access to financial services to support financial inclusion.

QRIS as the national QR code standard in Indonesia is designed to unite various QR codes from payment service providers into one standard, thereby facilitating interoperability and accelerating the adoption of digital payments in various segments, especially MSMEs. The increased use of QRIS is expected to accelerate the circulation of money in the economy, while providing richer transaction data for monetary authorities in monitoring economic activities and systemic risks.

Classically, the rate of money turnover is described through the theory of the quantity of money, which is formulated in *the equation of exchange*$MV = PY$, where is the amount of money supply, V is the velocity of money, P is the price rate, and is the real output or volume of transactions. This equation shows that total nominal expenditure in an economy is equal to the nominal value of output, so changes in or potential affect and/or Y[7].

In the classical view, it is often considered relatively constant in the short term and is determined by payment habits, the structure of the financial system, as well as the frequency of transactions, whereas change is seen as the main factor that drives prices. However, the development of modern payment technology makes constant assumptions V less realistic, as digitalization can increase the speed of money circulation and the frequency of transactions so that it V becomes more dynamic and influenced by innovations in the payment system.

In the context of this study, the rate of money turnover is understood as an indicator that reflects how fast the money supply is in the economy, and can be calculated empirically using the ratio between nominal GDP and aggregate money supply (e.g. M2) in a given period. Thus, changes in payment technology such as QRIS are seen as a potentially impacting factor V through increased transaction efficiency and frequency.

The theory of money quantity also places inflation as a monetary phenomenon that is influenced by the interaction between the money supply, the rate of money turnover, and output. If output is relatively stable, an increase or an unoffset increase in production could potentially drive up the price rate, which is reflected as inflation.

On the other hand, a more modern approach emphasizes that inflation is also influenced by the expectations of economic actors, monetary policy, supply-side conditions, and other structural factors, so that the relationship between money supply, velocity, and inflation is not always linear and stable. In the Indonesian context, inflation policy is directed to maintain price stability through liquidity

[6] Rahmatullah, *Efektivitas Kebijakan Moneter terhadap Inflasi*.

[7] Fevriera et al., "UJI PENGARUH E-MONEY TERHADAP PERUBAHAN STRUKTUR MODEL INFLASI."

management and monetary policy instruments while still paying attention to the development of the payment system and digitalization.

With the influx of digital payments such as QRIS, the patterns of demand for cash and non-cash can change, which in turn affects the relationship between monetary aggregates, the rate of money turnover, and inflation. This research departs from the framework that the acceleration of digital payments has the potential to modify monetary transmission channels through changes in the speed and behavior of people's transactions.

Based on this description, a study is needed that empirically analyzes the impact of the acceleration of digital payments through QRIS on the rate of money turnover and inflation in Indonesia. This research is expected to make an academic contribution to the development of the literature on the digitalization of the payment system and its implications on monetary variables, as well as provide practical input for relevant authorities in formulating payment system policies and inflation control in the digital economy era.

METHODOLOGY

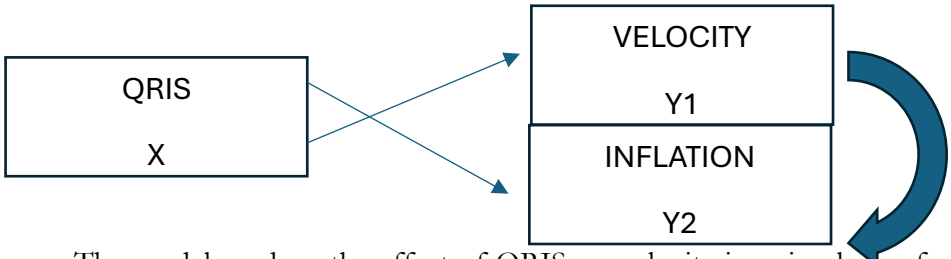
Accelerating digital payments through QRIS is a form of payment system innovation that aims to improve efficiency, speed, and ease of transactions in Indonesia. The significant increase in the value and volume of QRIS transactions reflects a change in people's behavior from the use of cash to faster and more practical non-cash transactions.

Payment digitization has the potential to affect **the velocity of money** because transactions can be made more frequently, with more varied values, and with lower transaction fees. Previous research on QRIS has shown that the use of QRIS has an influence on the velocity of money in the long run, while other studies on electronic money have also found that digital payment instruments can have a significant impact on the speed of money circulation. Thus, conceptually it can be expected that the acceleration of the use of QRIS will increase the rate of money turnover in Indonesia[8].

Within the framework of money quantity theory, changes in the money supply and the rate of money turnover have the potential to affect price levels, thus impacting inflation. Research on electronic money, velocity, and inflation in Indonesia shows that variations in velocity triggered by lower transaction costs can have a real impact on inflation dynamics, although the magnitude and significance can differ between the short and long term. With the entry of QRIS as a new digital payment channel, there is a possibility that the change in velocity triggered by QRIS will also contribute to changes in inflation, either directly or indirectly.

The framework of this study positions the acceleration of the use of QRIS as an independent variable that affects the rate of money turnover and inflation. On the other hand, the rate of money turnover is positioned not only as a dependent variable on QRIS, but also as a variable that has the potential to mediate the influence of QRIS on inflation, in line with the theory of money quantity that places velocity as a link between monetary aggregates and price levels. Thus, this study seeks to test: (1) the effect of QRIS on velocity, (2) the effect of QRIS on inflation, and (3) the role of velocity in mediating the relationship between QRIS and inflation in the 2020–2025 period.

Visually, the conceptual framework can be described as follows:



The model used on the effect of QRIS on velocity is a simple log form in the form of ARDL VECM[9] with the following model written:

$$V_t = \alpha_0 + \alpha_1 \, \mathrm{QRIS}_t + \varepsilon_t$$

[8] Suginam, "Evolution and Research Trends of QRIS."

[9] Halim et al., "PEMODELAN ANTARA VARIABEL EKONOMI SECARA BERSAMAAN MENGGUNAKAN PENDEKATAN VECTOR ERROR CORRECTION MODEL (VECM)."

Where:

- : the rate of money turnover in period t
- V_t : indicators of acceleration of QRIS usage (e.g. monthly QRIS transaction value log) in the t period
- QRIS_t : the expected coefficient is positive, representing that increased use of QRIS increases velocity
- α_1 The models used to test the influence of QRIS and velocity on inflation are as follows:

$$INF_t = \beta_0 + \beta_1 \,\text{QRIS}_t + \beta_2 V_t + \beta_3 \, M2_t + u_t$$

- INF_t : YoY inflation in the T period
- β_1 : the direct effect of QRIS acceleration on inflation (signs can be positive or negative, need to be empirically tested)
- β_2 : the effect of velocity on inflation; Referring to previous research, increasing velocity tends to increase inflation if output is relatively constant.
- β_3 : the effect of M2 as a monetary aggregate on inflation (optional, if you include M2)

RESULTS AND DISCUSSIONS

Before further analysis is carried out, it is necessary to first review the overview of research data through descriptive statistics. The following table shows the characteristics of each of the research variables, which include the size of the concentration, the spread of the data, as well as the indication of the distribution of the data.

Table. 1

	YOU CHOOSE	INF	M2	PDB	QRIS_VALUE
Mean	4.864583	2.495833	3.908750	3.688333	1.489583
Median	5.000000	2.050000	3.920000	3.710000	1.530000
Maximum	6.000000	5.000000	4.010000	3.790000	2.660000
Minimum	3.500000	1.000000	3.780000	3.570000	0.110000
Std. Dev.	0.923660	1.200536	0.061100	0.067674	0.802954
Skewness	-0.314391	0.874896	-0.370148	-0.342097	-0.215044
Kurtosis	1.615925	2.565274	2.221094	1.829886	1.822946
Jarque-Bera	2.311029	3.250760	1.154733	1.837290	1.570433
Probability	0.314895	0.196837	0.561375	0.399059	0.456021
Sum	116.7500	59.90000	93.81000	88.52000	35.75000
Sum Sq. Dev.	19.62240	33.14958	0.085863	0.105333	14.82890
Observations	24	24	24	24	24

Based on the results of descriptive statistics on 24 observations for the 2020Q1–2025Q4 period, the BI Rate variable has an average of 4.86, inflation of 2.50, M2 of 3.91, GDP of 3.69, and QRIS_VALUE of 1.49. The inflation and QRIS_VALUE variables show higher fluctuations, while M2 and GDP tend to be more stable.

Data Stationarity Test

As an initial stage in time series analysis, a stationary test was carried out using the Augmented Dickey-Fuller (ADF) method[10]. The test results in the following table show the ADF t-statistic value, probability, critical value of 5%, test decision, and order of integration of each research variable.

[10] Galbraith and Zinde-Walsh, "On the Distributions of Augmented Dickey–Fuller Statistics in Processes with Moving Average Components."

Table. 2

Variabel	Test Form	ADF t-Statistic	Prob.	Critical Value 5%	Verdict	Integration Order
B Rate (Virat)	D(BIRATE,2)	-7.71816	0	-3.65845	Stasions	I(2)
Inflation (INF)	D(INF)	-3.93485	0.0278	-3.6329	Stasions	I(1)
Money Supply (M2)	D(M2)	-5.41299	0.0003	-3.02069	Stasions	I(1)
Gross Domestic Product (GDP)	D(PDB)	-4.18168	0.0177	-3.64496	Stasions	I(1)
QRIS Transaction Value (QRIS_VALUE)	D(QRIS_VALUE)	-8.1391	0	-3.6329	Stasions	I(1)

Based on the results of the Augmented Dickey-Fuller (ADF) stationarity test, the variables INF, M2, GDP, and QRIS_VALUE were proven to be stationary at the first difference so that they were included in category I(1). Meanwhile, the BI Rate variable (BIRATE) is only stationary at the second difference so it is classified as I(2). Thus, it can be concluded that most of the research variables have qualified to be analyzed using the VECM model[11].

Lag Test

The determination of optimal lag aims to determine the duration of a variable's reaction to other variables in the VECM or VAR system. The lag length is tested based on several criteria, namely Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hannan-Quinn Criterion (HQ)12. The optimal lag is selected based on the smallest value of the criterion or the most number of asterisks.

Table 3

VAR Team Order Selection Criteria
Endogenous variables: BIRATE INF M2 PDB QRIS_VALUE
Exogenous variables: C
Date: 04/03/26 Time: 10:17
Sample: 2020Q1 2025Q4
Included observations: 22

Lag	LogL	LR	FPE	AIC	SC	HQ
0	73.67648	ON	1.34E-09	-6.243317	-5.995352	-6.184904
1	176.8033	150.0026*	1.18e-12	-13.34575	-11.85797*	-12.99528
2	209.7784	32.97512	8.73e-13*	-14.07076*	-11.34316	-13.42822*

* indicates lag order selected by the criterion

[11] Sitepu et al., "MODELING OF GROSS DOMESTIC PRODUCT (GDP) USING THE VECTOR ERROR CORRECTION MODEL (VECM) APPROACH."

[12] Dr. Indra Wijaya and Prof. Dr. Ns. Suprapto S. Kep, "Research Methodology."

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

In this study, the determination of lag length was carried out by looking at the values on the Likehood Ratio (LR), Final Predicition Error (FPE), Akaike Information Crition (AIC), Schwarz Information Crition (SC), and HannanQuin Crition (HQ) or the most asterisks. The determination of optimal lag using the information criteria is obtained by selecting the criteria that have the smallest value or the most asterisk among the various lags submitted. Therefore, the author takes a lag of 2 judging from the smallest values in the FPE, AIC and HQ values.

Cointegration

Table 4

Date: 04/03/26 Time: 10:22
Sample (adjusted): 2020Q4 2025Q4
Included observations: 21 after adjustments
Trend assumption: Linear deterministic trend
Series: Virat M2 PDB INF Chris_Value
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Self-esteem	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.993873	216.9321	69.81889	0.0000
At most 1 *	0.905568	109.9353	47.85613	0.0000
At most 2 *	0.749955	60.37778	29.79707	0.0000
At most 3 *	0.567819	31.26935	15.49471	0.0001
At most 4 *	0.478010	13.65223	3.841466	0.0002

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the Johansen cointegration test (Trace Test) showed that all Trace Statistic values > Critical Value 5% and Prob. < 0.05, so it can be concluded that there is a long-term cointegration relationship between the variables in the model.

Kausalitas Granger

The causality test aims to determine whether there is a cause-effect relationship between the variables in the study. A causal relationship is said to exist if the probability value < 0.05.

Table 5

Pairwise Granger Causality Tests
Date: 04/03/26 Time: 11:06
Sample: 2020Q1 2025Q4
Lags: 2

Null Hypothesis:	obs	F-Statistic	Prob.
M2 does not Granger Cause BIRATE	22	2.05209	0.1591
BIRATE does not Granger Cause M2		0.08845	0.9158
PDB does not Granger Cause BIRATE	22	4.71969	0.0234
BIRATE does not Granger Cause PDB		0.39020	0.6828
INF does not Granger Cause BIRATE	22	2.54772	0.1077
BIRATE does not Granger Cause INF		0.72578	0.4984
QRIS_VALUE does not Granger Cause BIRATE	22	4.04009	0.0367

BIRATE does not Granger Cause QRIS_VALUE		0.63183	0.5436
PDB does not Granger Cause M2	22	5.72345	0.0126
M2 does not Granger Cause PDB		5.58954	0.0136
INF does not Granger Cause M2	22	0.06822	0.9343
M2 does not Granger Cause INF		0.04726	0.9540
QRIS_VALUE does not Granger Cause M2	22	7.35569	0.0050
M2 does not Granger Cause QRIS_VALUE		0.53870	0.5931
INF does not Granger Cause PDB	22	1.07503	0.3634
PDB does not Granger Cause INF		0.92759	0.4146
QRIS_VALUE does not Granger Cause PDB	22	3.18236	0.0670
PDB does not Granger Cause QRIS_VALUE		1.50308	0.2506
QRIS_VALUE does not Granger Cause INF	22	0.77243	0.4774
INF does not Granger Cause QRIS_VALUE		1.17768	0.3319

From the results of the causality test above, the cause-and-effect relationship between the research variables can be determined as follows:

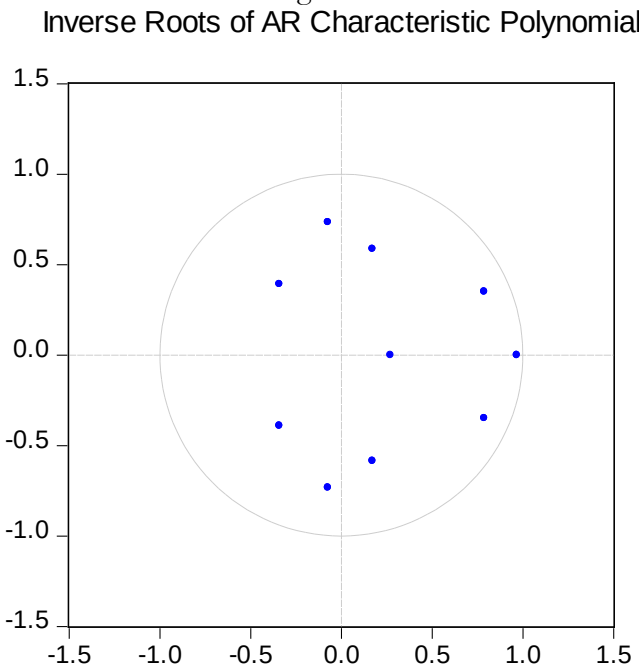
Table 6

Variable Pairs	**Prob.**	**Verdict**	**Types of Relationships**
M2 → BIRATE	0.1591	Insignificant	No causality
BIRATE → M2	0.9158	Insignificant	No causality
PDB → BIRATE	0.0234	**Signifikan**	One-way causality of GDP to BIRATE
BIRATE → PDB	0.6828	Insignificant	No causality
INF → BIRATE	0.1077	Insignificant	No causality
BIRATE → INF	0.4984	Insignificant	No causality
QRIS_VALUE → CHOOSE	0.0367	**Signifikan**	One-way causality QRIS_VALUE to BIRATE
CHOOSE → QRIS_VALUE	0.5436	Insignificant	No causality
PDB → M2	0.0126	**Signifikan**	Two-way causality
M2 → PDB	0.0136	**Signifikan**	Two-way causality
INF → M2	0.9343	Insignificant	No causality
M2 → INF	0.954	Insignificant	No causality
QRIS_VALUE → M2	0.005	**Signifikan**	One-way causality QRIS_VALUE to M2
M2 → QRIS_VALUE	0.5931	Insignificant	No causality
INF → GDP	0.3634	Insignificant	No causality

GDP → INF	0.4146	Insignificant	No causality
QRIS_VALUE → PDB	0.067	Insignificant (5%)	No causality
PDB → QRIS_VALUE	0.2506	Insignificant	No causality
QRIS_VALUE → INF	0.4774	Insignificant	No causality
INF → QRIS_VALUE	0.3319	Insignificant	No causality

Model Stability Test

Figure 1



Based on the *Inverse Roots of AR Characteristic Polynomial* graph , the image shows the inverse root plot of the autoregressive (AR) model characteristic polynomial in the model stability test between interest rates and inflation. All roots are inside the unit circle, which indicates that the AR model used is stable. This means that the relationship between interest rates and estimated inflation does not cause the model to diverge or get out of control.

VECM Results

Hypothesis Testing Results with t-statistical Test

Decision making to reject or accept the hypothesis with the sum of 24 data and with a significance level of 5% with the formula df (n-k-1) then (24-1-1 = 22) so that the t-table value on data 22 is selected. So the t-table value of 1.7011 is based on the following criteria:

Based on the comparison of the tcal values and the basic table of decision-making, the decision making is:

1) If tcount < , then H0 is accepted and Ha is rejected (no effect).

2) If the calculation is >, then H0 is rejected and Ha is accepted (there is an influence).

Dependent on the Rate of Money Turnover in Indonesia in the Period 2020–2025

Long-Term

Variabel	Coeficin	t-Statistics	Criteria	Remarks

QRIS_VALUE(-1)	-0.07185	-30.4564 >1.7011	**Signifikan**	There is a significant influence of the acceleration of digital payments through QRIS on the rate of money turnover in Indonesia

The estimation results showed that the variable **QRIS_VALUE(-1)** had a coefficient of **-0.07185** with a **t-statistical value of -30.4564**. Because the absolute value of t-statistics is greater than the t-table **(30.4564 > 1.7011),** the variable **QRIS_VALUE(-1)** is proven to have a significant effect on the rate of money turnover in Indonesia. A negative coefficient value indicates an opposite relationship, where the increase in the value of QRIS transactions in the previous period tends to be followed by a decrease in the rate of money turnover. Therefore, the research hypothesis is accepted. These findings indicate that digital transformation in the payment system, especially through QRIS, has implications for the behavior of money circulation in the economy.

Short Term

Variabel	Coeficin	t-Statistics	Criteria	Remarks
D(QRIS_VALUE(-1))	-0.02908	-0.65978 <1.7011	Insignificant	It has no short-term effect on the rate of money turnover in Indonesia
D(QRIS_VALUE(-2))	0.015846	0.49985<1.7011	Insignificant	It has no short-term effect on the rate of money turnover in Indonesia

Based on the results of the partial test on the short-term model, the variable **D(QRIS_VALUE(-1))** has a coefficient of **-0.02908** with a **t-statistical value of -0.65978**, while the variable **D(QRIS_VALUE(-2))** has a coefficient of **0.015846** with a **t-statistical value of 0.49985**. The two t-statistical values are absolutely smaller than **the t-table of 1.7011**, so it can be concluded that **D(QRIS_VALUE(-1))** and **D(QRIS_VALUE(-2))** do not have a significant effect on the rate of money turnover in Indonesia in the short term. Thus, the change in the value of QRIS transactions in the first and second lags has not been able to explain the change in the real rate of money turnover in the short term.

Inflation Dependent
Long-Term

Variabel	Coeficin	t-Statistics	Criteria	Remarks
YOU CHOOSE(-1)	-5.05735	-5.57652 >1,770	**Signifikan**	Significant effect on inflation in the long term
QRIS_VALUE(-1)	-0.20507	-2.5789	**Signifikan**	Significant effect on inflation in the long term
M2(-1)	387.2102	6.89335 >1,770	**Signifikan**	Significant effect on inflation in the long term
PDB(-1)	-283.033	-5.18102 >1,770	**Signifikan**	Significant effect on inflation in the long term

Based on the results of long-term partial tests, it is known that **the variables BIRATE(-1), QRIS_VALUE(-1), M2(-1),** and **GDP (-1)** have a significant influence on inflation. This is evidenced by the t-statistical value of each variable which is in absolute terms greater than the t-table value of **1.770**. The **BIRATE(-1)** variable has a coefficient **of -5.05735** with a t-statistical value **of -5.57652**, so it has a

negative and significant effect on inflation. The variable **QRIS_VALUE(-1)** has a coefficient **of -0.20507** with a t-statistical value **of -2.5789**, which shows a negative and significant influence on inflation. Furthermore, the **variable M2(-1)** has a coefficient **of 387.2102** with a t-statistical value **of 6.89335**, so it has a positive and significant effect on inflation. Meanwhile, the **GDP variable (-1)** has a coefficient **of -283.033** with a t-statistical value **of -5.18102**, which shows a negative and significant influence on inflation. Thus, all variables in the long-term model have been shown to play a role in explaining changes in inflation.

Short Term

Variabel	Coeficin	t-Statistics	Significance	Remarks
D(BIRATE(-1))	-0.61865	-1.06442 <1,770	Insignificant	Has no effect
D(BIRATE(-2))	0.808995	1.30128 <1,770	Insignificant	Has no effect
D(QRIS_VALUE(-1))	0.000727	0.01797 <1.770	Insignificant	Has no effect
D(QRIS_VALUE(-2))	-0.05581	-1.32752 <1.770	Insignificant	Has no effect
D(M2(-1))	-17.6544	-1.00557 <1,770	Insignificant	Has no effect
D(M2(-2))	-12.5101	-0.64402 <1,770	Insignificant	Has no effect
D(PDB(-1))	49.31996	2.61379 >1,770	**Signifikan**	GDP has a positive effect on inflation
D(PDB(-2))	-0.47178	-0.02793 <1,770	Insignificant	Has no effect

Based on the results of **short-term** estimates, it can be seen that most of the variables in the model have not shown a significant influence on **inflation**. This is indicated by the **t-statistical** value of each variable which is in absolute less than **the t-table value of 1.770**. Variable **D(BIRATE(-1))** has a coefficient of **-0.61865** with a **t-statistical value of -1.06442**, while **D(BIRATE(-2))** has a coefficient of **0.808995** with a **t-statistical value of 1.30128**. These two variables are not significant, so changes in the BI Rate in the first and second lags have not been proven to affect inflation in the short term.

Furthermore, the variable **D(QRIS_VALUE(-1))** has a coefficient of **0.000727** with a **t-statistical value of 0.01797**, while **D(QRIS_VALUE(-2))** has a coefficient of **-0.05581** with a **t-statistical value of -1.32752**. Since the two t-statistical values are smaller than the t-table, it can be concluded that the change in the value of QRIS transactions at the first lag and the second lag **has no significant effect** on inflation in the short term. Thus, the development of digital transactions through QRIS has not shown a real direct impact on changes in the inflation rate in the short-term observation period.

The variable **D(M2(-1))** has a coefficient of **-17.6544** with a **t-statistical value of -1.00557**, and **D(M2(-2))** has a coefficient of **-12.5101** with a **t-statistical value of -0.64402**. These two variables are also insignificant because their absolute t-statistical values are smaller than **1.770**. These results show that changes in the money supply in a broad sense in the first lag and the second lag have not been able to explain the change in inflation in a real way in the short term.

In contrast to other variables, **D(GDP(-1))** has been proven to have a **positive and significant** influence on inflation in the short term. This variable has a coefficient of **49.31996** with a **t-statistical value of 2.61379**, which means it is larger than **the t-table of 1.770**. These findings suggest that the increase in Gross Domestic Product in the previous period is likely to be followed by an increase in inflation. Meanwhile, **D(GDP(-2))** has a coefficient of **-0.47178** with **a t-statistical value of -0.02793**, so it is declared insignificant. Thus, only the change in GDP at the first lag has been shown to affect inflation in the short term.

Overall, the results of short-term estimates show that **only the variables D(GDP(-1)) have a significant effect on inflation**, while the variables **D(BIRATE(-1)), D(BIRATE(-2)), D(QRIS_VALUE(-1)), D(QRIS_VALUE(-2)), D(M2(-1)), D(M2(-2))**, and **D(GD(-2))** has no significant effect. These results indicate that in the short term, inflation dynamics are more responsive to changes in real economic activity reflected in GDP than to changes in interest rates, QRIS transactions, and money supply.

CONCLUSIONS

Based on the results of the analysis, this study concludes that the acceleration of digital payments through QRIS has an influence on monetary dynamics in Indonesia, especially in the long term. In the model with the dependent variable of the rate of money turnover, QRIS has been shown to have a negative and significant effect in the long term, but not a significant effect in the short term. These results show that the increase in the use of QRIS does not directly change the rate of money turnover in a short period of time, but in the longer horizon it is related to changes in the pattern of money circulation in the economy.

In the inflation model, the estimated results show that in the long term, the BI Rate, QRIS, M2, and GDP all have a significant effect on inflation. BI Rate, QRIS, and GDP have a negative influence, while M2 has a positive influence. Meanwhile, in the short term, only GDP at the first lag has been proven to have a positive and significant effect on inflation, while the BI Rate, QRIS, and M2 have not shown a significant influence. Thus, inflation in Indonesia in the short term is more responsive to changes in real economic activity, while in the long term it is more widely influenced by monetary factors, output, and the development of the digital payment system.

This study confirms that digital transformation through QRIS is not only related to transaction efficiency, but also has implications for monetary stability. Therefore, the development of a digital payment system needs to be accompanied by an adaptive monetary policy so that changes in people's transaction behavior remain in line with efforts to maintain price stability and the effectiveness of monetary policy transmission in Indonesia.

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