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Money supply, interest rates, and electronic money as determinants of inflation in indonesia: Evidence from vecm analysis (2018–2023)

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ABSTRACT

Inflation remains a key macroeconomic challenge for developing countries, including Indonesia, particularly amid monetary expansion and rapid digitalization of payment systems. This study analyzes the effects of money supply, interest rates, and electronic money (e-money) on inflation in Indonesia during the period 2018–2023. Using a quantitative approach, this research employs time-series data obtained from Bank Indonesia and the Central Statistics Agency (BPS). To capture both long-run equilibrium relationships and short-run dynamics among variables, the Vector Error Correction Model (VECM) is applied. The empirical results indicate that, in the long run, money supply and interest rates have a positive and statistically significant effect on inflation, suggesting that monetary expansion and higher borrowing costs contribute to rising price levels. In contrast, e-money exerts a significant negative effect on inflation in the long term, implying that the increasing use of digital payment instruments enhances transaction efficiency and reduces inflationary pressure. In the short run, only interest rates significantly affect inflation, while money supply and e-money do not show significant impacts, reflecting the presence of transmission lags in monetary policy and digital financial adoption. These findings highlight the importance of integrating digital payment systems into monetary policy frameworks. Policymakers are encouraged to consider the role of e-money development alongside conventional monetary instruments to achieve more effective inflation control and macroeconomic stability in Indonesia.

Keywords : Inflation; Money Supply; Interest Rates; Electronic Money; VECM

I. INTRODUCTION

Inflation is a fundamental macroeconomic indicator that reflects price stability and overall economic performance, particularly in developing economies such as Indonesia. Stable inflation is crucial for sustaining economic growth, preserving purchasing power, and maintaining social welfare (Mankiw, 2019; Mishkin, 2016). Persistent inflationary pressures can distort resource allocation, reduce real income, weaken savings, and increase income inequality, thereby undermining long-term economic development (Blanchard, 2021; Dornbusch et al., 2018).

As an emerging and open economy, Indonesia faces complex inflation dynamics driven by both domestic and external factors. Domestically, inflation is influenced by monetary policy,

fiscal conditions, and structural characteristics of production and consumption. Externally, global commodity price volatility, exchange rate movements, and international financial shocks play a significant role in shaping inflation outcomes (Gali, 2015; Obstfeld & Rogoff, 1996). These vulnerabilities became particularly evident during the COVID-19 pandemic and the post-pandemic recovery period, which were characterized by supply chain disruptions, energy price shocks, and tightening global monetary policies (IMF, 2023; World Bank, 2022).

From a theoretical standpoint, the relationship between money supply and inflation is primarily rooted in the Quantity Theory of Money, formalized by Fisher (1911) through the equation MV = PQ. This framework suggests that, holding velocity of money and real output constant, an increase in money supply leads directly to higher price levels. Empirical evidence across developing countries generally supports this proposition in the long run, although short-run effects may vary due to rigidities and policy transmission lags (Friedman, 1968; Lucas, 1996). Consequently, money supply remains a central variable in explaining inflationary trends.

Interest rates constitute another key determinant of inflation through the monetary transmission mechanism. Classical and Keynesian theories argue that higher interest rates reduce aggregate demand by increasing borrowing costs and encouraging savings, thereby exerting downward pressure on inflation (Keynes, 1936; Mishkin, 2016). However, empirical studies in emerging markets often reveal mixed results. In some contexts, interest rates are positively associated with inflation, consistent with the Fisher Effect, which posits that nominal interest rates adjust in response to expected inflation (Fisher, 1930; Woodford, 2003). This ambiguity underscores the importance of country-specific characteristics, expectations formation, and policy credibility in shaping the interest rate–inflation relationship.

In recent years, the rapid expansion of digital financial services has introduced new dimensions to inflation dynamics. One of the most significant developments is the growing use of electronic money (e-money) and digital payment systems. In Indonesia, the volume and value of e-money transactions have increased substantially, supported by regulatory initiatives from Bank Indonesia, the proliferation of fintech platforms, and changing consumer behavior (Bank Indonesia, 2023; Arner et al., 2020). Digital payments are increasingly used not only for retail transactions but also for public services and transportation, signaling a structural shift in the payment system.

Theoretically, e-money can affect inflation through multiple channels. On the one hand, digital payments may increase the velocity of money, potentially amplifying inflationary pressures if growth in output does not keep pace (Rogoff, 2016; Bjerg, 2017). On the other hand, e-money can enhance transaction efficiency, reduce cash handling costs, improve transparency, and support better monetary control, which may help stabilize prices in the long run (Bech & Garratt, 2017; Wulandari & Narmaditya, 2019). These opposing mechanisms suggest that the net impact of e-money on inflation is ultimately an empirical question. Empirically, Indonesia experienced notable inflation fluctuations during the 2018–2023 period. Inflation declined sharply during the pandemic due to weakened aggregate demand, before rising significantly in 2022 amid global energy price increases and supply-side constraints (BPS, 2023; IMF, 2023). At the same time, Bank Indonesia adjusted its policy interest rates to manage inflation expectations, while digital payment transactions expanded rapidly. This coexistence of monetary tightening and digital financial deepening provides a unique empirical setting to analyze inflation dynamics.

Despite the growing literature on inflation determinants, several research gaps remain. First, many studies focus primarily on conventional monetary variables such as money supply and interest rates, without explicitly incorporating digital payment instruments into the analysis (Amaliyah & Aryanto, 2022; Rahmayani et al., 2021). Second, empirical evidence on the

inflationary impact of e-money in developing countries is still limited and often inconclusive (Rosanti & Maulida, 2022; Arifin & Oktavilia, 2020). Third, a large number of previous studies rely on static or short-run models, which are unable to capture long-run equilibrium relationships and adjustment processes (Gujarati & Porter, 2009). To address these gaps, this study employs the Vector Error Correction Model (VECM), which enables the simultaneous examination of long-run cointegration relationships and short-run dynamics among variables (Johansen, 1991; Enders, 2015). By integrating money supply, interest rates, and e-money into a single dynamic framework, this research provides a more comprehensive understanding of inflation behavior in Indonesia.

The novelty of this study lies in its integrated analysis of conventional monetary policy instruments and digital payment systems using recent post-pandemic data. Unlike prior studies that treat digital finance as a peripheral factor, this research positions e-money as a core variable influencing inflation dynamics. Furthermore, by distinguishing between short-run and long-run effects, this study offers deeper insights into the transmission mechanisms of both monetary policy and digitalization. From a policy perspective, this research is highly relevant. As Indonesia continues to promote a cashless society and financial inclusion, understanding the macroeconomic implications of e-money becomes increasingly urgent. The findings of this study are expected to support policymakers in designing more adaptive monetary policies that integrate digital financial innovation with traditional policy tools to achieve sustainable price stability.

II. LITERATURE REVIEW

Money Supply Theory and Inflation

The relationship between money supply and inflation is a central theme in classical and modern macroeconomic theory. The Quantity Theory of Money, introduced by Fisher (1911), posits that an increase in the money supply will lead to a proportional increase in the general price level, assuming constant velocity of money and real output. This theory is formalized through the equation MV = PQ, which links monetary expansion directly to inflationary pressure. The theoretical framework emphasizes that inflation is fundamentally a monetary phenomenon. As a result, money supply has long been regarded as a key determinant of inflation dynamics (Friedman, 1968).

In the long run, the Quantity Theory of Money suggests a strong and stable relationship between money supply growth and inflation. Friedman (1968) argues that persistent inflation cannot occur without sustained monetary expansion, reinforcing the long-run neutrality of money with respect to real output. Empirical studies across developing economies confirm that excessive growth in money supply tends to translate into higher inflation over time. This relationship becomes more evident when monetary growth outpaces real economic growth. Therefore, long-run inflation is widely viewed as a consequence of monetary mismanagement (Lucas, 1996).

However, in the short run, the relationship between money supply and inflation may not be immediate or proportional. Keynesian theory highlights the existence of price rigidities, adjustment costs, and delays in monetary transmission that can weaken the short-term impact of money supply changes on inflation (Keynes, 1936). Additionally, short-run inflation is often influenced by exogenous factors such as supply shocks, fiscal policy, and global commodity price fluctuations. These factors may overshadow the effect of money supply in the short term.

Consequently, empirical studies frequently find insignificant or weak short-run effects of money supply on inflation (Mishkin, 2016).

In the context of developing and open economies, the money supply–inflation relationship becomes more complex. Structural weaknesses, financial market imperfections, and external vulnerabilities can alter the effectiveness of monetary control (Dornbusch et al., 2018). In countries like Indonesia, inflation is not only driven by domestic monetary expansion but also by exchange rate movements and imported inflation. This condition implies that money supply remains a necessary but not sufficient factor in explaining inflation behavior. Nonetheless, monetary expansion continues to play a dominant role in shaping long-term inflation trends (Gali, 2015).

Interest Rate Theory and Inflation

Interest rates play a crucial role in the transmission mechanism of monetary policy and the control of inflation. According to Keynesian monetary theory, interest rates influence inflation indirectly through their effects on consumption, investment, and aggregate demand (Keynes, 1936). Higher interest rates increase the cost of borrowing, discourage private investment, and reduce consumer spending. As aggregate demand weakens, upward pressure on prices is expected to decline. Therefore, conventional theory predicts a negative relationship between interest rates and inflation (Mishkin, 2016).

In contrast to the Keynesian view, the Fisher Effect provides an alternative explanation of the interest rate–inflation relationship. Fisher (1930) argues that nominal interest rates adjust to changes in expected inflation on a one-to-one basis. According to this hypothesis, higher inflation expectations lead to higher nominal interest rates rather than the reverse. As a result, a positive relationship between interest rates and inflation may be observed empirically. This perspective suggests that interest rates may reflect, rather than suppress, inflationary conditions (Woodford, 2003).

Empirical studies in developing and emerging economies often produce mixed findings regarding the impact of interest rates on inflation. In some cases, interest rate hikes fail to reduce inflation due to weak monetary transmission mechanisms and low financial market depth (Gali, 2015). Additionally, structural rigidities and high dependence on imported goods can limit the effectiveness of interest rate policies. Under such conditions, higher interest rates may increase production costs and contribute to cost-push inflation. Consequently, interest rates may exhibit a positive and significant relationship with inflation in certain contexts (Blanchard, 2021).

In open economies like Indonesia, the interaction between interest rates and inflation is further complicated by external factors. Exchange rate volatility, capital flows, and global financial conditions can weaken the impact of domestic interest rate adjustments (Obstfeld & Rogoff, 1996). Moreover, policy credibility and inflation expectations play a critical role in determining the effectiveness of interest rate policies. If economic agents perceive interest rate increases as signals of persistent inflation, inflation expectations may rise instead of fall. Thus, the relationship between interest rates and inflation remains context-dependent and empirically relevant for policy analysis (IMF, 2023).

Electronic Money Theory and Inflation

The rapid development of electronic money (e-money) has introduced new dynamics into modern monetary systems. E-money is defined as a digital payment instrument that represents

stored monetary value and is widely used for transactions without physical cash (Bank for International Settlements, 2018). The expansion of e-money is closely associated with financial innovation, digitalization, and increased transaction efficiency. As a result, e-money has the potential to alter traditional monetary relationships. Its growing adoption raises important questions regarding its impact on inflation (Arner et al., 2020).

From a theoretical perspective, e-money may influence inflation through changes in the velocity of money. Increased use of digital payments can accelerate transaction speed, potentially increasing money circulation within the economy (Rogoff, 2016). According to the Quantity Theory of Money, higher velocity may contribute to inflation if not matched by growth in real output. This mechanism suggests that widespread e-money adoption could amplify inflationary pressure. However, this outcome is not automatic and depends on broader economic conditions (Bjerg, 2017).

Alternatively, e-money may contribute to inflation control by enhancing payment system efficiency and reducing cash usage. Digital transactions improve transparency, lower transaction costs, and facilitate better monitoring of monetary flows by central banks (Bech & Garratt, 2017). These features can strengthen monetary policy effectiveness and reduce excessive liquidity in the form of cash. Moreover, e-money platforms often impose transaction limits that help restrain excessive consumption. Consequently, increased use of e-money may reduce inflationary pressure in the long run (Wulandari & Narmaditya, 2019).

Empirical evidence on the relationship between e-money and inflation remains limited, particularly in developing countries. Several studies find that e-money has no significant short-run impact on inflation due to its indirect transmission mechanism (Arifin & Oktavilia, 2020). However, long-run analyses suggest that digital payments can contribute to price stability by improving financial inclusion and monetary control (Rosanti & Maulida, 2022). In Indonesia, rapid growth in e-money usage coincides with structural changes in consumption behavior and payment habits. Therefore, examining the long-run and short-run effects of e-money on inflation is essential for understanding modern inflation dynamics.

III. METHODS

Research Design

This study employs a quantitative research design to examine the dynamic relationship between money supply, interest rates, electronic money (e-money), and inflation in Indonesia. A time-series approach is adopted to capture both short-run and long-run interactions among the variables over the period 2018–2023. Quantitative analysis is particularly suitable for macroeconomic studies as it allows for objective measurement and statistical inference of relationships between variables (Gujarati & Porter, 2009). The research focuses on identifying causal dynamics and equilibrium relationships rather than descriptive patterns. Therefore, an econometric modeling framework is applied to achieve the research objectives.

Data and Sources

The study utilizes secondary time-series data covering the period from January 2018 to December 2023. Inflation data are obtained from the Central Statistics Agency of Indonesia (Badan Pusat Statistik/BPS), while data on money supply (M1), interest rates (BI Rate), and electronic money transactions are sourced from Bank Indonesia. These institutions are official

and credible sources widely used in macroeconomic research. All variables are transformed into natural logarithms to reduce heteroskedasticity and allow elasticity-based interpretation, except inflation, which is measured in percentage terms. The use of monthly data enhances the robustness of the empirical analysis by capturing short-term fluctuations and long-term trends.

Variable Definition and Measurement

Inflation is used as the dependent variable and measured by the annual percentage change in the Consumer Price Index (CPI). Money supply is represented by narrow money (M1), which includes currency in circulation and demand deposits. Interest rates are proxied by the Bank Indonesia policy rate (BI Rate), reflecting the stance of monetary policy. Electronic money is measured by the total value of e-money transactions, representing the level of digital payment usage in the economy. Table 2 presents the operational definition and measurement of each variable.

Table 1. Variable Definition and Measurement

Variable	Symbol	Measurement	Source
Inflation	INF	CPI growth (%)	BPS
Money Supply (M1)	JUB	Narrow money (M1)	Bank Indonesia
Interest Rate	BIR	BI Rate (%)	Bank Indonesia
Electronic Money	EMONEY	Value of e-money transactions	Bank Indonesia

Econometric Model Specification

To analyze both long-run equilibrium relationships and short-run dynamics among the variables, this study employs the Vector Error Correction Model (VECM). VECM is appropriate when variables are non-stationary but cointegrated, indicating the existence of a long-run equilibrium relationship (Johansen, 1991). The general form of the VECM can be expressed as follows:

$$\Delta INF_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta lnJUB_{t-1} + \sum_{i=1}^{p} \alpha_2 \Delta lnBIR_{t-1} + \sum_{i=1}^{p} \alpha_3 \Delta lnEMONEY_{t-1} + \lambda ECT_{t-1} + \varepsilon_t$$

where Δ denotes the first difference operator, ECTt−1 represents the error correction term capturing long-run adjustment, and εt\varepsilon_tεt is the error term.

Estimation Procedure

The empirical analysis follows several systematic steps. First, stationarity tests are conducted using the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests to determine the order of integration of each variable (Dickey & Fuller, 1979). Second, the optimal lag length is selected based on standard information criteria, including the Akaike Information Criterion (AIC) and Schwarz Criterion (SC). Third, the Johansen cointegration test is applied to examine the existence of long-run relationships among the variables. Once cointegration is confirmed, the VECM is estimated to capture both short-run dynamics and long-run equilibrium adjustments (Enders,

2015).

Diagnostic and Stability Tests

To ensure the reliability and validity of the estimated model, several diagnostic tests are conducted. These include serial correlation tests, heteroskedasticity tests, and normality tests of the residuals. Additionally, stability tests such as the Cumulative Sum (CUSUM) and CUSUM of Squares are employed to examine the stability of the model parameters over time. Impulse Response Functions (IRF) and Variance Decomposition (VD) analyses are also performed to assess the dynamic responses of inflation to shocks in money supply, interest rates, and e-money. These tests provide deeper insights into the transmission mechanism and adjustment speed of inflation dynamics.

IV. RESULTS AND DISCUSSION

Stationarity Test Results

Before estimating the Vector Error Correction Model (VECM), stationarity tests were conducted to examine the time-series properties of all variables. The Augmented Dickey–Fuller (ADF) test was applied to inflation, money supply (M1), interest rates (BI Rate), and electronic money (e-money). The results indicate that all variables are non-stationary at level but become stationary after first differencing. This finding confirms that all variables are integrated of order one, I(1), satisfying the prerequisite for cointegration analysis.

The presence of non-stationarity at level suggests that shocks to the variables have persistent effects. Such characteristics are common in macroeconomic time-series data, particularly in monetary and financial variables. Consequently, estimating the model in levels without correction could lead to spurious regression results. Therefore, the analysis proceeds using a cointegration-based approach.

After confirming stationarity at first difference, the study advances to testing for long-run equilibrium relationships. Since all variables share the same order of integration, cointegration testing using the Johansen method is appropriate. This step ensures that both long-run and short-run dynamics can be captured within a unified econometric framework.

Johansen Cointegration Test Results

The Johansen cointegration test was employed to examine whether inflation, money supply, interest rates, and e-money share a long-run equilibrium relationship. The test results indicate the existence of at least one cointegrating vector at the 5 percent significance level. This finding confirms that the variables move together in the long run despite short-run fluctuations. Therefore, deviations from equilibrium are temporary and tend to converge over time.

The existence of cointegration implies that inflation is not solely driven by short-term shocks but is influenced by long-term monetary and structural factors. This result strengthens the relevance of monetary variables and digital payment instruments in explaining inflation behavior. Moreover, it validates the theoretical expectation that inflation is closely linked to monetary dynamics. As a result, the Vector Error Correction Model is the most suitable estimation approach.

By incorporating the error correction mechanism, the VECM explicitly models how short-

run deviations from equilibrium are corrected over time. This feature distinguishes the VECM from unrestricted VAR models. Consequently, the estimation captures both long-run coefficients and short-run adjustment processes. The following sections present the long-run and short-run estimation results.

Long-Run VECM Estimation Results

The long-run estimation results derived from the VECM are presented in Table 4. The results show that money supply (M1) has a positive and statistically significant effect on inflation. The estimated coefficient of money supply is 14.77017, with a t-statistic of 3.88147, exceeding the critical t-value of 1.66757. This indicates that an increase in money supply significantly increases inflation in the long run.

Interest rates (BI Rate) also have a positive and statistically significant effect on inflation. The estimated coefficient is 5.238894, with a t-statistic of 2.47969, indicating significance at the 5 percent level. This result suggests that higher interest rates are associated with rising inflation in the long term, reflecting expectation and cost-related transmission mechanisms in the Indonesian economy.

In contrast, electronic money exhibits a negative and statistically significant effect on inflation. The coefficient of e-money is −11.07562, with a t-statistic of −4.72635, which is statistically significant in absolute terms. This finding implies that increased usage of e-money contributes to reducing inflation in the long run, highlighting the stabilizing role of digital payment systems.

Table 2. Long-Run VECM Estimation Results

Variable	Coefficient	t-Statistic	Critical t-value	Result
LN_JUB(−1)	14.77017	3.88147	1.66757	Significant (+)
LN_BIR(−1)	5.238894	2.47969	1.66757	Significant (+)
LN_EMONEY(−1)	−11.07562	−4.72635	1.66757	Significant (−)
Constant	−80.25071	—	—	—

Short-Run VECM Estimation Results

Short-run dynamics are captured through the differenced variables and the error correction term (ECT). The estimated ECT coefficient is −0.048568, with a t-statistic of −2.49996, indicating statistical significance. The negative sign confirms that inflation adjusts toward its long-run equilibrium after short-run shocks. Approximately 4.86 percent of disequilibrium is corrected within one period.

In the short run, changes in money supply do not significantly affect inflation. The coefficient of ΔLN_JUB is −0.022924, with a t-statistic of −0.01767, which is far below the critical value. This result indicates that monetary expansion does not immediately translate into inflationary pressure. Instead, its effect emerges over a longer horizon.

Interest rates, however, have a positive and statistically significant short-run effect on inflation. The coefficient of ΔLN_BIR is 2.709289, with a t-statistic of 2.07101, indicating significance at the 5 percent level. Meanwhile, e-money does not have a significant short-run effect on inflation, as shown by a coefficient of −0.152786 and a t-statistic of −0.40448.

Table 3. Short-Run VECM Estimation Results

Variable	Coefficient	t-Statistic	Critical t-value	Result
Error Correction Term	−0.048568	−2.49996	1.66757	Significant
ΔLN_JUB(−1)	−0.022924	−0.01767	1.66757	Not significant
ΔLN_BIR(−1)	2.709289	2.07101	1.66757	Significant (+)
ΔLN_EMONEY(−1)	−0.152786	−0.40448	1.66757	Not significant

Dynamic Analysis: Impulse Response and Variance Decomposition

Impulse Response Function (IRF) analysis indicates that a positive shock to money supply generates a persistent increase in inflation over time. This response reflects the long-run inflationary impact of monetary expansion. The inflation response stabilizes after several periods as the system converges toward equilibrium. This pattern is consistent with the long-run VECM estimation results.

Interest rate shocks produce a positive response in inflation, particularly in the short run. This suggests that interest rate changes influence inflation relatively quickly compared to other variables. The response gradually diminishes as the economy adjusts to the shock. This dynamic confirms the dominant short-run role of interest rates in inflation movements.

In contrast, shocks to e-money result in a negative response of inflation over the longer horizon. Variance Decomposition results indicate that inflation variability is largely driven by its own shocks in the short run. However, in the long run, the contributions of money supply, interest rates, and e-money increase. This highlights the growing importance of digital payments in shaping long-term inflation dynamics.

Discussion

The empirical results confirm that money supply exerts a positive and statistically significant effect on inflation in the long run. This finding is consistent with the classical and monetarist view, particularly the Quantity Theory of Money, which posits that an increase in money supply leads to higher price levels when output growth is relatively stable. The long-run coefficient of money supply indicates that inflationary pressures in Indonesia are fundamentally driven by monetary expansion. This result aligns with previous empirical studies in developing economies, which emphasize the dominant role of monetary aggregates in shaping inflation dynamics. Therefore, controlling money growth remains essential for maintaining long-term price stability.

Interestingly, money supply does not exhibit a significant effect on inflation in the short run. This result suggests the presence of transmission lags in Indonesia's monetary system, where changes in liquidity take time to influence consumption and price formation. Such delays may be attributed to financial intermediation frictions, behavioral adjustments, and expectations formation among economic agents. This finding supports Keynesian perspectives that monetary policy effects on prices are not instantaneous. Consequently, policymakers should recognize that short-term inflation fluctuations may not immediately reflect monetary expansion.

The positive and significant long-run impact of interest rates on inflation reveals a cost-channel mechanism rather than the conventional demand-suppression channel. Higher interest rates increase production costs, especially for firms reliant on credit financing, which are then passed on to consumers in the form of higher prices. This phenomenon has been widely documented in emerging economies where financial markets are less efficient. The Indonesian context, characterized by strong credit dependence in the real sector, reinforces this

interpretation. Thus, interest rate policy may inadvertently generate inflationary pressure if not carefully calibrated.

In the short run, interest rates are found to significantly influence inflation, indicating a faster transmission compared to money supply. This result highlights the role of interest rates as a primary monetary policy instrument in Indonesia. Changes in the BI Rate rapidly affect borrowing costs, consumer spending, and inflation expectations. The finding is consistent with inflation-targeting frameworks that prioritize interest rates as the main policy lever. Therefore, interest rate adjustments remain an effective tool for managing short-term inflation volatility.

The negative and statistically significant long-run effect of electronic money on inflation provides important insights into the role of digital payments. Increased use of e-money enhances transaction efficiency, reduces cash hoarding, and improves payment transparency. These factors contribute to lower transaction costs and more efficient price formation, thereby dampening inflationary pressures. This finding supports recent literature arguing that financial digitalization can promote macroeconomic stability. In the Indonesian context, the expansion of cashless payments appears to strengthen inflation control in the long term.

However, the absence of a significant short-run effect of e-money on inflation suggests that digital payment adoption influences inflation gradually rather than immediately. Behavioral adaptation, infrastructure development, and regulatory adjustments may explain this delayed impact. Nonetheless, the long-run stabilizing role of e-money underscores its strategic importance for monetary authorities. Overall, the findings reveal that inflation in Indonesia is shaped by both traditional monetary variables and structural transformation through digitalization. This combination highlights the need for integrated monetary and digital financial policies.

V. CONCLUSION

This study concludes that inflation in Indonesia is influenced by both traditional monetary variables and the growing role of digital financial instruments. Money supply and interest rates have significant positive effects on inflation in the long run, while electronic money contributes to inflation reduction, indicating its stabilizing role in the economy. In the short run, interest rates emerge as the most effective policy instrument, whereas money supply and e-money effects materialize gradually. These findings imply that Bank Indonesia should continue exercising prudent monetary control while simultaneously strengthening digital payment ecosystems to enhance price stability. Policy coordination between monetary authorities and digital finance regulators is therefore essential to maximize the long-term benefits of financial digitalization. However, this study is limited by its focus on a specific set of monetary variables and time period, potentially excluding structural, fiscal, and external factors affecting inflation. Future research is encouraged to incorporate broader macroeconomic variables, longer observation periods, and cross-country comparisons to enrich understanding of inflation dynamics in the digital economy.

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