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The Influence of Digital Money, Financial Inclusion, and Investment on Economic Growth in Indonesia

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Abstract−The rapid growth of digital finance has reshaped economic activities in emerging markets, including Indonesia. As financial technology evolves, understanding its influence on economic development becomes increasingly important. This study aims to examine the impact of digital money, financial inclusion, and investment on economic growth in Indonesia from 2009 to 2023. A quantitative approach was employed using the Autoregressive Distributed Lag (ARDL) model to analyze annual time series data. The results reveal that in the long run, all three variables digital money, financial inclusion, and investment significantly and positively influence economic growth. Investment had the largest impact, followed by financial inclusion and digital money. In the short run, digital money and investment remain significant, while financial inclusion shows a lagged negative effect. The error correction term is significant and negative, confirming a stable long-run relationship. The findings underscore the importance of promoting investment and strengthening digital and financial infrastructure to enhance both immediate and sustained economic performance in Indonesia's digital economy.

Keywords: Digital Money; Financial Inclusion; Investment; Economic Growth; ARDL.

1. INTRODUCTION

The advancement of digital technology over the past two decades has profoundly transformed the global financial system, including in Indonesia (Murinde et al., 2022). One of the most notable changes is the emergence of digital money, which encompasses electronic payment instruments such as e-money, digital wallets, and cryptocurrencies (Murinde et al., 2022). According to Bank Indonesia, the total value of electronic money transactions in Indonesia exceeded IDR 400 trillion in 2022, marking an increase of approximately 30% compared to the previous year (Abidin et al., 2023). This growth reflects the increasing acceptance of digital money as an efficient, secure, and inclusive means of payment (Permana et al., 2024).

This financial digitalization aligns with Indonesia's broader agenda of expanding financial inclusion, defined as the public's access to and usage of formal financial services (Kenedi & Sukmawan, 2022). Based on the National Survey on Financial Inclusion conducted by the Financial Services Authority (OJK), Indonesia's financial inclusion index rose from 67.8% in 2016 to 85.1% in 2022. This significant improvement indicates that more people, including those in rural and remote areas, are gaining access to financial services such as savings, credit, insurance, and investment products (Anggriawan et al., 2023). Financial inclusion is widely recognized to have a positive impact on economic growth by enabling individuals and businesses to participate in economic activities, accumulate capital, and enhance purchasing power and financial resilience (Hussain et al., 2024).

Moreover, investment plays a crucial role in driving a nation's economic growth (Tovar Jalles et al., 2024). In macroeconomic theory, investment contributes to aggregate demand in the short run and builds productive capacity in the long run (Ramey et al., 2022). Data from Statistics Indonesia (BPS) shows that investment, as measured by Gross Fixed Capital Formation (GFCF), has accounted for over 30% of Indonesia's Gross Domestic Product (GDP) in recent years (Kenedi, 2022). However, the effectiveness of investment in stimulating economic growth is largely dependent on the efficiency of the financial system and the population's ability to access formal financing (Osei & Kim, 2020).

In this context, the interrelationship between digital money, financial inclusion, and investment is essential to explore. The adoption of digital technologies in the financial system has the potential to lower transaction costs, broaden access to financial services, and accelerate money circulation in the economy (Adel, 2024). The digitalization of finance also enhances financial inclusion through innovations such as branchless banking, peer-to-peer (P2P) lending, and mobile-based financial services (Basnayake et al., 2024). At the same time, improved access to financial services is expected to encourage greater investment activities by individuals and businesses, particularly micro, small, and medium enterprises (MSMEs) that have historically faced barriers to capital (Tay et al., 2022).

Despite the theoretical potential of these three variables to support economic growth, empirical studies in Indonesia that examine their simultaneous effects remain limited (Susanti & Sholeh, 2020). Previous research has primarily focused on the individual impact of either financial inclusion or investment on GDP, while studies integrating digital money, financial inclusion, and investment into a unified analytical framework are scarce (Hussain et al., 2024; Pranajaya et al., 2024; Saeed & Klugah, 2025). Therefore, this study is timely and important in providing a more comprehensive understanding of the dynamics of financial digitalization and its strategic role in fostering economic growth in Indonesia.

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Additionally, this research has substantial policy relevance. The Indonesian government is currently promoting a nationwide digital transformation through initiatives such as the National Digital Literacy Movement, the OJK's Digital Financial Innovation framework, and Bank Indonesia's white paper on the development of a Central Bank Digital Currency (CBDC). Considering these developments, understanding the macroeconomic implications of digital money becomes crucial to ensure that digital transformation not only occurs at a technological level but also contributes to tangible economic benefits (Saefullah et al., 2024).

This study aims to empirically examine the influence of digital money, financial inclusion, and investment on Indonesia's economic growth in both the short and long run. Using time-series data and appropriate econometric approaches, the research seeks to quantify the contribution of each variable to the country's economic dynamics. The findings are expected to offer both theoretical contributions to the literature on macroeconomic development and practical insights for policymakers in formulating digital and inclusive economic strategies.

In brief, this research is not only academically relevant but also carries broad policy implications, particularly in supporting Indonesia's digital transformation agenda, improving financial inclusion, and accelerating investment. In the long term, a deeper understanding of the relationship between these factors and economic growth can serve as a foundation for designing sustainable development strategies based on technology, accessibility, and inclusive participation.

2. RESEARCH METHODS

This study adopts a quantitative approach using annual time series data covering the period from 2009 to 2023. The data were obtained from official and credible sources such as the World Bank (World Development Indicators), Bank Indonesia (BI), and relevant government publications. Economic growth (LNEG) is measured using GDP per capita (constant 2015 US$). Digital money (LNDM) is proxied by the value of electronic money transactions (in billions of Rupiah). Financial inclusion (LNATM) is measured by the number of Automated Teller Machines (per 100,000 adults), and gross fixed capital formation (current US$) serves as a proxy for investment (LNINV). Both LNATM and LNINV are included in the model as control variables.

The data analysis is conducted using the Autoregressive Distributed Lag (ARDL) modeling approach, following confirmation that the data meet key classical assumptions such as stationarity, absence of autocorrelation, and residual normality. The initial step involves testing for stationarity using the Augmented Dickey-Fuller (ADF) method, followed by an examination of long-run relationships and the estimation of short-run parameters. An empirical model is then developed and presented in Equation (1).

$$\mathrm{lnEG_t} = \alpha_0 + \alpha_1 \mathrm{ln\ DM_t} + \alpha_2 \mathrm{ln\ ATM_t} + \alpha_3 \mathrm{ln\ INV_t} + \varepsilon_t \quad (1)$$

The ARDL approach is employed due to its several advantages over traditional cointegration techniques. Specifically, the ARDL testing procedure yields effective results whether the variables are integrated at level I(0), at first difference I(1), or when the variables are cointegrated with each other. Moreover, it is suitable for studies with small sample sizes and allows for a mix of integration orders among the variables under investigation. The ARDL model equation is formulated as follows.

$$\mathrm{lnEG_t} = \beta_0 + \textstyle\sum_{i=1}^{p} \beta_{1i}\Delta \mathrm{LNEG_{t-i}} + \sum_{i=1}^{p} \gamma\beta_{2i}\Delta \mathrm{lnDM_{t-i}} + \sum_{i=1}^{p} \beta_{3i}\Delta \mathrm{lnATM_{t-i}} + \sum_{i=1}^{p} \beta_{4i}\Delta \mathrm{lnINV_{t-i}} + \beta_5 \mathrm{lnEG_{t-1}} + \beta_6 \mathrm{lnDM_{t-1}} + \beta_7 \mathrm{lnATM_{t-1}} + \beta_8 \mathrm{lnINV_{t-1}} + \varepsilon_t \quad (2)$$

The symbol Δ represents the difference operator. This testing procedure includes an F-test to assess the joint significance of the lagged variable coefficients, aiming to determine the existence of a long-run relationship among the variables under investigation. The null hypothesis (H_0) states that there is no long-run relationship between the variables ($H_0: \beta_5 = \beta_6 = \beta_7 = \beta_8 = 0$), and it is tested based on the bounds testing approach developed by (Pesaran et al., 2001). Subsequently, the Error Correction Model (ECM) is employed to estimate the short-run dynamics among the variables that have been identified as having a long-run relationship.

$$\mathrm{lnEG_t} = \beta_0 + \textstyle\sum_{i=1}^{p} \beta_{1i}\Delta \mathrm{LNEG_{t-i}} + \sum_{i=1}^{p} \gamma\beta_{2i}\Delta \mathrm{lnDM_{t-i}} + \sum_{i=1}^{p} \beta_{3i}\Delta \mathrm{lnATM_{t-i}} + \sum_{i=1}^{p} \beta_{4i}\Delta \mathrm{lnINV_{t-i}} + \alpha_1 \mathrm{ECT_{t-1}} + \varepsilon_t \quad (3)$$

A negative and statistically significant coefficient of $\mathrm{ECT_{t-1}}$ (α_1) indicates that any long-term disequilibrium between the dependent variable and a set of independent variables will gradually adjust toward the long-run equilibrium.

3. RESULT AND DISCUSSION

3.1 Descriptive statistics

Descriptive statistics are used to analyse the minimum, maximum, mean, and standard deviation of each observed variable. This stage aims to provide an initial understanding of data distribution and trends, serving as a foundation for further inferential analysis.

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Table 1. Descriptive statistics

Item	LNEG	LNDM	LNATM	LNINV
Mean	8.116388	31.04364	3.637375	26.44179
Median	8.136463	30.54001	3.880633	26.43893
Maximum	8.341089	35.15933	4.003948	26.71406
Minimum	7.842365	26.97558	2.545686	25.84657
Std. Dev.	0.155225	2.840365	0.525864	0.216503

Table 1 displays the descriptive statistics for the study variables. The average value of economic growth (LNEG) is 8.12 with low variability (std. dev. 0.16), indicating stable GDP per capita. Digital money (LNDM) has the highest variability (mean = 31.04; std. dev. = 2.84), suggesting dynamic growth in electronic transactions. Financial inclusion (LNATM) averages 3.64 with moderate variation, reflecting varying access to financial services. Investment (LNINV) shows consistency with a mean of 26.44 and a low standard deviation of 0.22, indicating steady capital formation. Overall, the data suggest meaningful variation, particularly in digital finance, with stable investment and economic growth indicators.

3.2 Unit Root Test

The Unit Root Test is conducted to assess the stationarity of each variable before applying the ARDL model. ARDL requires variables to be stationary at level I(0) or first difference I(1), but not at I(2).

Table 2. Unit Root Test

Variable	ADF	
	Level	1st Difference
LNEG	-1.6079	-3.0218*
LNDM	-0.2018	-3.1692*
LNATM	-2.2396	-16.3348***
LNINV	-4.4235***	-4.2516***

Note: (*, **, ***) indicate significance at the 10%, 5%, and 1% confidence levels, respectively.

Table 2 presents the results of the Augmented Dickey-Fuller (ADF) unit root test. LNEG and LNDM are non-stationary at level but become stationary at the first difference, indicating they are integrated at I(1). LNATM also becomes stationary after differencing, with strong significance at the 1% level, confirming I(1) integration. In contrast, LNINV is stationary both at level and first difference, suggesting integration at I(0). Since none of the variables are integrated at I(2), the ARDL model is appropriate for analysis. These results confirm mixed integration orders, fulfilling one of the key preconditions for applying the ARDL bounds testing approach.

3.3 ARDL Bounds Test

The ARDL Bounds Test is used to examine the existence of a long-run (cointegration) relationship among variables in the ARDL model. It compares the F-statistic with lower (I(0)) and upper (I(1)) critical bounds. If the F-statistic exceeds the I(1) bound, a long-run relationship is confirmed.

Table 3. Results of ARDL Cointegration Test

Test Statistic	Value	Signif.	Lower Bounds I (0)	Upper Bounds I (1)
F-statistic	12.71647	10%	2.01	3.1
k	3	5%	2.45	3.63
		2.50%	2.87	4.16
		1%	3.42	4.84

Notes: Optimal lag structure (2,2,2,0) selected based on AIC

Table 3 reports the results of the ARDL bounds cointegration test. The F-statistic value of 12.71647 is significantly higher than all upper bound critical values at the 10%, 5%, 2.5%, and 1% significance levels, indicating strong evidence of a long-run cointegration relationship among the variables. With the optimal lag structure (2,2,2,0) selected based on the Akaike Information Criterion (AIC), these findings confirm that despite the variables having mixed orders of integration (I(0) and I(1)), a stable and meaningful long-run equilibrium relationship exists. Therefore, the use of the ARDL model is justified for further long- and short-run analysis.

3.4 Diagnostic and Stability Test

Diagnostic tests are conducted to ensure that the ARDL model satisfies the classical assumptions of regression analysis. Stability testing is carried out to assess whether the model parameters remain consistent over the observation period. The primary method used for this purpose is the CUSUM (Cumulative Sum) test.

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Table 4. Results of Diagnostic Tests

Test	Prob.
NORMAL	0.8946
SERIAL	0.0651
HETEROS	0.3721
RESET	0.6071

Table 4 shows that all diagnostic test p-values exceed the 5% significance level, indicating that the ARDL model satisfies key classical assumptions. The residuals are normally distributed, free from heteroscedasticity, and show no major serial correlation. The model is well-specified.

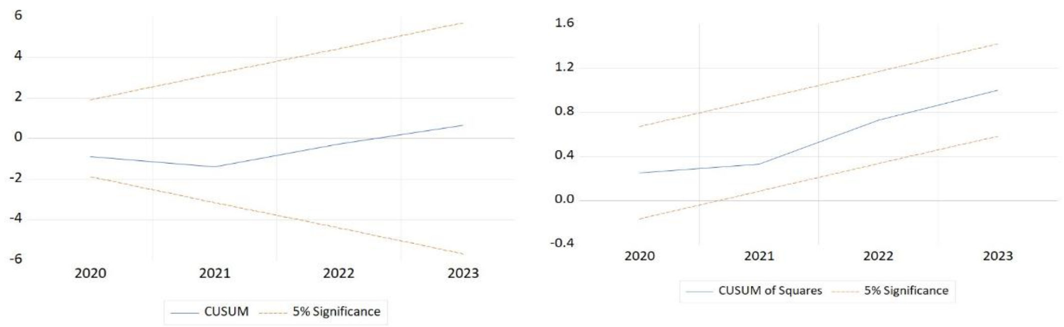

Figure 1. Plot of CUSUM and CUSUM of Squares

Figure 1 shows CUSUM and CUSUM of Squares plots within 5% significance bounds, indicating stable parameters and no structural breaks. This confirms that the ARDL model meets the required stability condition for reliable estimation.

3.5 ARDL Estimation

ARDL estimation analyses both short-run and long-run relationships between variables, even when they have different integration orders (I(0) or I(1)). It includes lagged values of dependent and independent variables, allowing flexibility in modelling dynamic behaviour and identifying long-term equilibrium while capturing short-term adjustments in the data.

Table 5. Results of long-run and short-run coefficients employing the ARDL approach

Dependent Variable is LNEG: ARDL (2,2,2,0) selected based on AIC				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Long-run Estimation				
LNDM	0.027651***	0.001904	14.52081	0.0001
LNATM	0.080613***	0.010216	7.891222	0.0014
LNINV	0.263396***	0.002318	113.6359	0.0000
Short-run Estimation				
D(LNEG(-1))	0.653979***	0.099367	6.581426	0.0028
D(LNDM)	0.024865***	0.004258	5.839956	0.0043
D(LNDM(-1))	-0.02925***	0.004626	-6.32239	0.0032
D(LNATM)	0.008909	0.00935	0.952926	0.3946
D(LNATM(-1))	-0.04425***	0.009341	-4.73756	0.0091
CointEq(-1)	-0.93732***	0.099347	-9.43479	0.0007
Note: (***) indicate significance at the 1% confidence levels, respectively				

Table 5 presents the long-run and short-run coefficient estimates using the Autoregressive Distributed Lag (ARDL) model, with the dependent variable being the logarithm of GDP per capita (LNEG). The optimal lag structure (2,2,2,0) was selected based on the Akaike Information Criterion (AIC), ensuring model parsimony and efficiency.

The long-run estimation results indicate that all explanatory variables are statistically significant at the 1% level and exhibit a positive relationship with economic growth. Digital Money (LNDM) shows a coefficient of 0.027651 with a t-statistic of 14.52081 and a p-value of 0.0001. The highly significant result suggests that digital money plays a meaningful role in supporting long-term economic expansion. A 1% increase in the value of electronic money transactions is associated with approximately a 2.77% increase in GDP per capita. This supports the notion that financial digitalization enhances transaction efficiency, reduces frictions in the financial system, and facilitates broader economic participation over the long run (Ratna et al., 2024). Financial Inclusion (LNATM) is also positively associated with economic growth, with a coefficient of 0.080613 and a p-value of 0.0014. This finding implies that

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improvements in access to financial services, proxied by the number of ATMs, contribute significantly to the productive engagement of households and firms within the formal financial system (Mohd Daud et al., 2024). As more individuals gain access to banking facilities, savings mobilization, credit distribution, and consumption smoothing are enhanced, which are all conducive to sustained economic development (Ouma et al., 2017). Investment (LNINV) demonstrates the largest long-run impact on economic growth, with a coefficient of 0.263396 and an exceptionally high t-statistic (113.6359). This strong magnitude and statistical significance indicate that investment remains a cornerstone of Indonesia's economic growth process. The variable reflects gross fixed capital formation, representing physical capital accumulation, which enhances productive capacity, infrastructure development, and long-run output potential (Koopman & Wacker, 2023).

The joint significance and expected signs of these long-run coefficients provide strong support for the theoretical propositions that digital financial systems, inclusive financial access, and capital investment are essential growth-enhancing factors in the modern economy.

The short-run estimations reveal both immediate and lagged effects of the explanatory variables on economic growth, offering insight into the dynamic adjustment process toward long-run equilibrium. The first-differenced lag of economic growth (D(LNEG(-1))) has a positive and highly significant coefficient of 0.653979 ($p = 0.0028$), suggesting persistence in economic performance, where past growth influences present outcomes. This is consistent with dynamic macroeconomic models in which output follows an autoregressive path due to structural inertia and adaptive expectations (Fuhrer, 2017). D(LNDM) is positively significant with a coefficient of 0.024865 ($p = 0.0043$), indicating that increases in digital money usage are associated with immediate increases in economic growth. This suggests that the velocity and convenience of digital transactions promote short-term economic activity, particularly in consumption and small business operations (Hermawan et al., 2024). However, the lagged difference D(LNDM(-1)) has a negative and significant coefficient (-0.02925; $p = 0.0032$), indicating possible adjustment effects or diminishing marginal returns in subsequent periods. This dual dynamic reflects a short-run acceleration followed by normalization in the economic response to digital financial activity. For financial inclusion D(LNATM), the immediate effect is statistically insignificant ($p = 0.3946$), suggesting that ATM expansion does not directly influence short-term output. However, the lagged term D(LNATM(-1)) is negative and highly significant (-0.04425; $p = 0.0091$), which may suggest inefficiencies in the deployment or usage of financial infrastructure, such as lagging adoption, regional disparities, or underutilization of ATM services in certain areas. This warrants further investigation into the quality and accessibility of financial inclusion efforts. These short-run dynamics highlight the complex interplay of technology adoption, infrastructure utilization, and capital responsiveness, emphasizing the need for both immediate and sustained policy interventions (Ellström et al., 2022).

The coefficient of the error correction term, ECT(-1), is -0.93732 and is statistically significant at the 1% level ($p = 0.0007$). The negative sign and magnitude close to unity indicate that the system corrects approximately 93.7% of any deviation from the long-run equilibrium within a single period (i.e., one year). This rapid speed of adjustment confirms the existence of a stable long-term relationship among the variables and validates the robustness of the ARDL model specification. Moreover, the significance of the ECT supports the findings from the bounds cointegration test and reinforces the appropriateness of using the ARDL framework in the presence of mixed integration orders (I(0) and I(1)).

4. CONCLUSION

This study analyzed the impact of digital money, financial inclusion, and investment on economic growth in Indonesia using the ARDL approach with annual data from 2009 to 2023. The findings provide robust evidence of both long-run and short-run relationships among the variables, supporting theoretical expectations and offering empirical validation for policy development. In the long run, all three variables digital money, financial inclusion, and investment positively and significantly affect economic growth. Investment has the strongest long-term effect, reaffirming its vital role in capital formation and productive capacity enhancement. Financial inclusion also contributes meaningfully to long-run growth, reflecting the importance of accessible financial services in broadening economic participation. Digital money, while significant, shows a relatively smaller long-run effect, suggesting that its transformative potential is still evolving. In the short run, digital money demonstrates an immediate positive impact, though its lagged effect turns negative, indicating a dynamic but potentially volatile influence. Financial inclusion shows a lagged negative effect, implying that infrastructure expansion alone may not yield immediate growth benefits without corresponding improvements in service quality and usage. The significant and negative error correction term confirms a strong adjustment mechanism toward long-run equilibrium. Based on these results, policymakers are advised to strengthen investment incentives, expand digital infrastructure, and improve financial inclusion strategies by focusing on quality, accessibility, and digital literacy. Encouraging productive use of digital finance and ensuring efficient allocation of capital will be key to sustaining long-term economic growth in the digital era.

REFERENCES

Abidin, R., Dewi, S., Asmalasari, A. S., Syawali, F. I., & Hidayat, H. S. (2023). The Use of Electronic Money as a Transaction System in Indonesia. Journal of Islamic Economics and Business, 3(2), 101–117. https://doi.org/10.15575/jieb.v3i2.30487

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Adel, N. (2024). The impact of digital literacy and technology adoption on financial inclusion in Africa, Asia, and Latin America. Heliyon, 10(24), e40951. https://doi.org/10.1016/j.heliyon.2024.e40951

Anggriawan, M. A., Kenedi, K., & Kurniawanto, H. (2023). Analisis Potensi Pajak Daerah dengan Pendekatan Makro-Mikro di Kota Serang. Owner, 7(3), 1959–1967. https://doi.org/10.33395/owner.v7i3.1420

Basnayake, D., Naranpanawa, A., Selvanathan, S., & Bandara, J. S. (2024). Financial inclusion through digitalization and economic growth in Asia-Pacific countries. International Review of Financial Analysis, 96, 103596. https://doi.org/10.1016/j.irfa.2024.103596

Ellström, D., Holtström, J., Berg, E., & Josefsson, C. (2022). Dynamic capabilities for digital transformation. Journal of Strategy and Management, 15(2), 272–286. https://doi.org/10.1108/JSMA-04-2021-0089

Fuhrer, J. (2017). Expectations as a source of macroeconomic persistence: Evidence from survey expectations in a dynamic macro model. Journal of Monetary Economics, 86, 22–35. https://doi.org/10.1016/j.jmoneco.2016.12.003

Hermawan, D., Lie, D., Sasongko, A., & Yusan, R. I. (2024). Money velocity, digital currency and inflation dynamics in Indonesia. Bulletin of Indonesian Economic Studies, 60(3), 305–345. https://doi.org/10.1080/00074918.2024.2398347

Hussain, S., Rehman, A. ur, Ullah, S., Waheed, A., & Hassan, S. (2024). Financial Inclusion and Economic Growth: Comparative Panel Evidence from Developed and Developing Asian Countries. Sage Open, 14(1). https://doi.org/10.1177/21582440241232585

Kenedi, K. (2022). Pengaruh Konsumsi Energi dan Pajak Dengan Mediasi Pertumbuhan Ekonomi Terhadap Polusi di 9 Negara ASEAN. Jurnal Bina Bangsa Ekonomika, 15(1), 201–210. https://doi.org/10.46306/jbbe.v15i1.156

Kenedi, K., & Sukmawan, I. (2022). Dampak Health Capital Terhadap Pertumbuhan Ekonomi: Pembuktian Dari Negara Terpilih di Asia Tenggara Dengan Pendekatan Model Autoregressive Distributed Lag (ARDL). National Conference on Applied Business, Education, & Technology (NCABET), 2(1), 135–148. https://doi.org/10.46306/ncabet.v2i1.73

Koopman, E., & Wacker, K. M. (2023). Drivers of growth accelerations: What role for capital accumulation? World Development, 169, 106297. https://doi.org/10.1016/j.worlddev.2023.106297

Mohd Daud, S. N., Ahmad, A. H., & Trinugroho, I. (2024). Financial inclusion, digital technology, and economic growth: Further evidence. Research in International Business and Finance, 70, 102361. https://doi.org/10.1016/j.ribaf.2024.102361

Murinde, V., Rizopoulos, E., & Zachariadis, M. (2022). The impact of the FinTech revolution on the future of banking: Opportunities and risks. International Review of Financial Analysis, 81, 102103. https://doi.org/10.1016/j.irfa.2022.102103

Osei, M. J., & Kim, J. (2020). Foreign direct investment and economic growth: Is more financial development better? Economic Modelling, 93, 154–161. https://doi.org/10.1016/j.econmod.2020.07.009

Ouma, S. A., Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion: Is it a boon for savings mobilization? Review of Development Finance, 7(1), 29–35. https://doi.org/10.1016/j.rdf.2017.01.001

Permana, B. R. S., Kenedi, K., & Huda, M. (2024). Utilization of Virtual Reality as a Sustainable Tourism Promotion Strategy Based on Information Technology in Banten Province. JINAV: Journal of Information and Visualization, 5(2), 229–239. https://doi.org/10.35877/454RI.jinav3055

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3). https://doi.org/10.1002/jae.616

Pranajaya, E., Alexandri, M. B., Chan, A., & Hermanto, B. (2024). Examining the influence of financial inclusion on investment decision: A bibliometric review. Heliyon, 10(3), e25779. https://doi.org/10.1016/j.heliyon.2024.e25779

Ramey, V. A., Glaeser, E. L., & Poterba, J. M. (2022). Chapter 4. The Macroeconomic Consequences of Infrastructure Investment. Economic Analysis and Infrastructure Investment, 219–268. https://doi.org/10.7208/chicago/9780226800615.003.0005

Ratna, S., Saide, S., Putri, A. M., Soleha, A., & Andini, P. R. (2024). Financial Systems Transformation in the Digital Age: A Systematic Review and Future Research Directions. Procedia Computer Science, 234, 1538–1545. https://doi.org/10.1016/j.procs.2024.03.155

Saeed, U. F., & Klugah, G. E. (2025). Driving inclusive growth through financial systems and technology adoption: a global analysis of synergistic pathways using structural equation modeling. Cogent Economics & Finance, 13(1). https://doi.org/10.1080/23322039.2025.2523955

Saefullah, E., Kenedi, K., & Khaerudin, D. (2024). Reducing Greenhouse Gas Emissions in Beef Cattle Farming through the Implementation of Animal Welfare Principles, as Part of Sustainable Rural Area Development. Jurnal Penelitian Pendidikan IPA, 10(4), 1468–1476. https://doi.org/10.29303/jppipa.v10i4.6824

Susanti, E., & Sholeh, M. (2020). Indonesia Economic Growth Determinant: The Impact Of Macro Economic Variables And International Trade. International Journal of Economics and Financial Issues, 10(5), 70–76. https://doi.org/10.32479/ijefi.10273

Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022). Digital financial inclusion: A gateway to sustainable development. Heliyon, 8(6), e09766. https://doi.org/10.1016/j.heliyon.2022.e09766

Tovar Jalles, J., Park, D., & Qureshi, I. (2024). Public and Private Investment as Catalysts for Growth: An analysis of emerging markets and developing economies with a focus on Asia. Journal of International Money and Finance, 148, 103166. https://doi.org/10.1016/j.jimonfin.2024.103166