

Do Democracy and Investment Promote Regional Economic Performance? Evidence from Panel Data Analysis

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Abstract

This study investigates whether democracy and investment promote regional economic performance in Indonesia. It employs panel data for 34 provinces over the period 2021–2023, modelling real GRDP per capita as a function of provincial democracy, investment, central government transfers per capita, and population. The empirical analysis is conducted using EViews 13, comparing pooled OLS, random effects, and fixed effects specifications; Chow, Breusch–Pagan LM, and Hausman tests consistently indicate that the fixed effects model is the most appropriate. The estimation results show that provincial democracy, as measured by the Indonesian Democracy Index, does not exert a statistically significant direct effect on regional economic performance within the short observation window. By contrast, investment displays a positive and robust association with real GRDP per capita across specifications, confirming its role as the main proximate driver of regional growth. Central government transfers per capita and population do not exhibit a stable growth-enhancing effect and, in some cases, are weakly or negatively associated with regional output. The findings of this study indicate that, in the short run, investment is the key channel through which regional economies respond to institutional and fiscal environments, while democracy operates more as a deep institutional background whose economic impact is not immediately visible in annual growth outcomes.

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1. Introduction

For more than two decades following the 1998 Reform, Indonesia has undergone profound institutional transformations driven by democratization and fiscal political decentralization. Authority over planning, budgeting, and public service delivery was shifted to local governments with the expectation of reducing development centralization and accelerating welfare convergence across regions. Decentralization has significantly reshaped the architecture of central–local relations and altered patterns of interregional competition in attracting investment and managing public expenditure (Kis-Katos & Sjahrir, 2017; Talitha et al., 2020), yet its effects on regional economic performance have proven far from uniform.

Several regions particularly those in eastern Indonesia continue to lag in fiscal performance and productivity despite receiving substantial transfers and expanded administrative authority (Sugiyarto et al., 2025). As a result, decentralization generates meaningful development outcomes only when local institutional capacity, fiscal governance, and political incentives align with the objectives of efficiency and equity (Kis-Katos & Sjahrir, 2017; Setiawan et al., 2022). Data from the Indonesian Democracy Index (IDI) compiled by Statistics Indonesia reveal considerable variation in democratic quality across provinces and over time. The revised IDI methodology introduced in 2021 emphasizes the principles of freedom, equality, and the role of state institutions (Statistics Indonesia, 2025). These patterns do not consistently correspond with macroeconomic indicators such as GRDP growth, the Human Development Index, or the Gini coefficient (Sijabat, 2024), leaving open the question of whether democracy truly “translates” into stronger regional economic performance.

The institutional economics literature since Douglass North has emphasized that institutions represent the “rules of the game” shaping incentives, constraining opportunistic behavior, and ultimately determining the trajectory of a region’s economic performance (North, 1990). Within the deep determinant’s framework, institutional quality is considered

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more influential than geography or trade openness in explaining variations in per capita income (Rodrik et al., 2004). This perspective aligns with the arguments of Acemoglu and Robinson (2012), who contend that it is the combination of inclusive political and economic institutions rather than procedural democracy alone that enables innovation, long-term investment, and a more equitable distribution of growth benefits.

Consolidated democracy characterized by accountability, constraints on executive power, and the protection of civil liberties functions as an “institutional asset” that reduces political risk and improves risk–return calculations for investors (Acemoglu et al., 2019; Persson & Tabellini, 2009). However, cross-country and longitudinal evidence demonstrates that the effect of democracy on economic growth is highly contingent upon institutional context and stages of development. Democracy tends to serve as a growth enabler only when accompanied by political stability and adequate policy capacity (Sima & Huang, 2023). In the Indonesian context, Nuzulman, Masbar, Nazamuddin, and Majid (2023) explicitly show that investment plays a critical mediating role in the relationship between civil liberties, political freedoms, democratic institutional quality, and economic growth: while political freedoms and democratic institutions tend to encourage investment and stimulate growth, civil liberties that are not supported by sufficient regulatory capacity may instead erode economic performance.

These findings align with the broader subnational literature in Indonesia, which highlights the heterogeneous effects of democracy across regions. Iskandar and Subekan (2020) demonstrate that the democracy growth relationship is non-linear, largely due to differences in fiscal capacity, economic structure, and the quality of public expenditure among provinces. Jamil, Ananda, and Prasetyia (2022) further find that democracy more clearly promotes economic growth in the provinces of Java and the western regions, whereas its influence is significantly weaker in other areas; simultaneously, democracy and fiscal capacity exert a strong combined effect on provincial GRDP per capita. At a more granular level, governance quality proxied by internal control systems, performance accountability, audit opinions, and the capacity to manage locally generated revenue contributes significantly to local economic growth (Fauji & Syafitri, 2024). In contrast, favoritism in the allocation of development grants illustrates how weak political institutions can distort resource distribution and undermine the effectiveness of fiscal decentralization (Gonschorek, 2021).

The dimensions of political competition and local government stability also warrant careful consideration. Healthy political competition can enhance economic performance by creating electoral incentives for improving public services, yet excessive competition may trigger budget politicization and coalition fragmentation (Rezki, 2022). In the era of regional autonomy, institutional variables such as fiscal decentralization, institutional capacity, and governance quality thus emerge as critical determinants of regional economic growth (Abdillah et al., 2023).

Beyond the institutional domain, regional economic performance is also strongly influenced by a region’s ability to accumulate physical capital, mobilize fiscal resources, and manage demographic dynamics. Investment in both foreign direct investment (FDI) and domestic direct investment (DDI) serves as a primary engine of capital deepening, technological adoption, and improvements in labor productivity. Empirical evidence indicates that provinces receiving larger investment inflows tend to experience higher GRDP growth, although the relative contributions of FDI and DDI vary across regions depending on their economic base and local institutional capacity (Nur et al., 2019; Arum & Kaluge, 2025; Nur et al., 2025). Stable and diversified investment strengthens the foundations of regional growth through the expansion of production capacity, infrastructure development, and deeper integration into national and global value chains (Nur et al., 2019).

On the other hand, the architecture of central government transfers including the General Allocation Fund (DAU), the Special Allocation Fund (DAK), revenue-sharing funds, and other schemes are designed to correct disparities in fiscal capacity and expand the fiscal space for development spending. However, their effectiveness is far from uniform. Highly aggregated formulas that are insufficiently sensitive to socio-economic variations have resulted in limited equalizing effects (Paulina & Adiawaty, 2025). In some cases, the DAU and DAK may even widen educational disparities when not directed toward expenditure that genuinely targets service quality, whereas the School Operational Assistance (BOS) program which is more needs-based has proven more effective in reducing such gaps (Wirandana & Khoirunurrofik, 2024). Studies on flypaper effects further show that central transfers often “stick” to routine expenditures and do not fully translate into productive public investment, both in Indonesia (Nurosidah et al., 2023) and in other jurisdictions (Ortega et al., 2022).

The demographic dimension complements these two clusters of variables. Shifts in age structure that increase the share of the working-age population and reduce the dependency ratio create opportunities for a demographic dividend, provided that the education system and labor market are able to absorb and enhance the quality of the labor force. Indonesia’s demographic transition has been shown to contribute positively to economic growth through reductions in

the dependency ratio and increases in capital accumulation (Rostiana & Rodesbi, 2020). However, more recent evidence indicates that demographic dividend indicators do not always exert a significant influence on regional growth when not accompanied by improvements in human capital quality (Hidayat & Prabowo, 2024). The persistently inelastic employment elasticity of growth in many sectors implies that additional output does not automatically translate into expanded employment opportunities (Maryam et al., 2025). Meanwhile, the quality of education and labor market governance determines whether age-structure dynamics will materialize as a genuine demographic dividend or merely a statistical illusion (Firmansyah, 2025). In this context, demographic variables such as total population or age structure indicators in regional analysis not only represent market scale but also reflect potential pressures or demographic dividends on regional productive capacity and aggregate demand.

Accordingly, incorporating investment, central government transfers, and demographic dynamics into the empirical model allows for a sharper distinction between fundamental economic influences and the role of democracy and institutions in shaping regional economic performance. Investment captures the capacity for capital accumulation and economic integration, central transfers represent the fiscal architecture and the design of intergovernmental incentives, and demographic characteristics reflect the potential labor supply and market size. The combination of these three blocks of variables provides a more comprehensive framework for assessing whether, after controlling for these structural factors, variations in the quality of democracy and institutions still hold significant explanatory power for regional economic outcomes in Indonesia.

2. Literature Review

Broadly speaking, the literature on democracy and economic performance can be categorized into three main streams. The first consists of cross-country studies that examine the democracy–growth relationship and frequently report mixed findings regarding both democratization and long-term economic performance (Acemoglu et al., 2019; Sima & Huang, 2023). The second includes subnational studies in Indonesia that employ the Indonesian Democracy Index (IDI) to explain interprovincial variations in economic growth (Adib et al., 2019; Jamil et al., 2022; Trinugroho et al., 2023; Sijabat, 2024; Utomo & Soetjipto, 2025). The third encompasses the literature on fiscal decentralization, institutional capacity, and investment as determinants of regional growth, which highlights transfer design, spending autonomy, and governance quality but generally does not model democracy explicitly (Fadli, 2016; Amri & Amri, 2021; Sofilda et al., 2023; Telaumbanua, 2023; Yuwono et al., 2025). Each strand offers important contributions, yet none fully addresses how democracy and investment operate jointly in shaping regional economic performance.

At the provincial level, a growing body of recent research confirms that democracy is relevant to economic performance, although its influence is far from homogeneous. Sijabat (2024) shows that democracy, human development, and income distribution are associated with regional economic performance, although the effect of democracy is not consistent across all regional clusters. Trinugroho et al. (2023) find that democracy is linked to growth and inequality, while Adib et al. (2019) report that the Indonesian Democracy Index does not always exert a significant influence when compared with other variables such as the Gini index, minimum wages, population, and the human development index. These mixed results suggest that the democracy–growth relationship in Indonesia remains an empirical puzzle that has not been fully resolved. Efforts to address this puzzle appear in studies that emphasize heterogeneity and the role of other institutional variables. Jamil et al. (2022) affirm that the impact of democracy varies across provinces, while Utomo and Soetjipto (2025) demonstrate that democracy and fiscal capacity exert stronger effects when considered jointly, even though investment, fiscal transfers, and demographic factors are still generally positioned as additional control variables.

At the same time, the literature focusing on investment, governance, and fiscal decentralization often approaches the issue from the opposite direction. Democracy is frequently placed in the background or treated as an implicit institutional assumption. Studies on decentralization and growth highlight the roles of fiscal capacity, spending autonomy, and the quality of transfer design (Fadli, 2016; Sofilda et al., 2023; Telaumbanua, 2023), while research on the investment climate and regulatory environment emphasizes subnational governance quality as a determining factor in attracting investment and promoting growth (Amri and Amri, 2021; Yuwono et al., 2025). However, these studies rarely incorporate democracy explicitly into the model. As a result, the two strands of literature tend to evolve in parallel: one examines democracy and growth with investment in the background, and the other analyzes investment and growth with democracy treated as an unmodeled institutional context.

From a temporal and methodological perspective, an important gap remains. Most provincial panel studies on democracy and growth use data that extend only to around 2019–2020 (Adib et al., 2019; Jamil et al., 2022; Sijabat, 2024; Trinugroho et al., 2023), which means they do not fully capture the post Covid-19 dynamics, a period during

which the role of central fiscal transfers intensified and regional economic recovery patterns became highly asymmetric. The revision of the Indonesian Democracy Index methodology implemented by Statistics Indonesia in the more recent period also has implications for interpreting provincial democracy scores, yet this has not been extensively examined within an empirical framework that simultaneously integrates democracy, investment, fiscal transfers, and demographics after 2020. Although fixed effects and random effects models have become standard approaches, there are still very few studies that explicitly design model specifications to compare the explanatory power of democracy and investment after controlling for fiscal and demographic factors within a highly up-to-date time horizon (2021–2023).

These gaps underscore the need for new research. Conceptually, there is room to bridge the democracy–growth literature with the literature on investment and fiscal decentralization through a model that positions democracy and investment as the primary determinants of regional economic performance, while central government transfers per capita and population are treated as structural factors that frame growth outcomes. Empirically, the panel of 34 provinces during the short yet intense post pandemic period of 2021 to 2023 provides a relevant laboratory for testing whether democracy truly supports investment in promoting regional economic performance or whether investment remains the principal engine of growth while democracy, demographics, and fiscal transfers play weaker or more ambiguous roles. This study is designed to fill that space.

Within the landscape of research that has examined democracy, investment, and economic growth, this study positions itself as a bridge between two strands of literature that have tended to evolve in parallel. On one side, there is a body of work that focuses on the relationship between democracy and economic performance, both in cross-country settings and across provinces in Indonesia. On the other side, there is a growing literature that highlights the role of investment, the design of fiscal transfers, and subnational institutional capacity as key drivers of regional growth. This study is deliberately situated at the intersection of these two strands. Democracy is not treated merely as a stand-alone political variable, and investment is not positioned solely as an economic control. Instead, both are placed as primary determinants of regional economic performance that are examined simultaneously within a single empirical framework.

Empirically, this study focuses on 34 provinces in Indonesia within a relatively short yet highly strategic time horizon, namely the period 2021 to 2023. This period represents the post pandemic phase in which economic recovery pressures, fiscal adjustments, and the consolidation of subnational democracy occurred simultaneously. Using a panel data approach, the study models regional economic performance, such as real GRDP per capita, as a function of democracy, investment, central government transfers per capita, and demographic dynamics represented by population, and estimates the model using panel techniques including pooled OLS, fixed effects, and random effects, which are then rigorously selected through the Chow test, Breusch Pagan LM test, and Hausman test.

Accordingly, the study adopts a clear position that democracy and investment are not viewed as two separate domains but as two dimensions of the same problem, namely how political and institutional configurations shape the incentives of economic actors and ultimately influence regional economic performance. The panel data of 34 Indonesian provinces for the 2021 to 2023 period serves as an empirical laboratory for testing whether democracy and investment effectively promote regional economic performance after accounting for the roles of fiscal and demographic factors that accompany the development process in the era of decentralization.

3. Research Method and Materials

3.1. Research Design

This study employs an explanatory quantitative research design using a panel-data approach (province × year) to analyze the causal relationships between democratic institutions, central government transfers, investment, and regional economic performance. Empirical analysis is conducted using EViews 13, which facilitates the estimation of various panel model specifications and the selection of the most appropriate model based on relevant statistical tests.

3.2. Sample and Data Description

The study utilizes a sample comprising all 34 provinces in Indonesia. The use of data from these 34 provinces enables a comprehensive assessment and comparison of welfare disparities across regions in Indonesia. The following table presents a summary of the data used in this study:

Table 1. Operational Definition of Variables

Variable	Symbol	Indicator	Unit	Source
Regional Economic Performance	$pdrb_pc_{it}$	$pdrb_pc_{it} = \frac{PDRB}{Populasi}$	Rupiah per capita	Statistics Indonesia (Badan Pusat Statistik)
Institutional Quality	$democ_{it}$	Indonesian Democracy Index	Index	Ministry of Finance, Directorate General of Fiscal Balance
Investment	Inv_{it}	Domestic Direct Investment	ln(Investment)	
Population	pop_{it}	Total Population	Ln(Population)	
Central Government Transfer Funds	cgt_pc_{it}	$cgt_pc = \frac{CGT}{Population}$	Billion Rupiah	

3.3. Econometric Estimation Model

Conceptually, the relationships among the variables described above can be expressed in the following panel-data models.

3.3.1. Baseline Model (Pooled OLS)

$$\ln(pdrb_pc_{it}) = \beta_0 + \beta_1 democ_{it} + \beta_2 \ln(Inv_{it}) + \beta_3 \ln(pop_{it}) + \mu_i + \beta_4 \ln(cgt_pc_{it}) + \gamma_t + \varepsilon_{it}$$

where i denote the province, t denotes the year of observation, and ε_{it} the composite error term

3.3.2. Fixed Effects Model (FEM)

$$\ln(pdrb_pc_{it}) = \beta_0 + \beta_1 democ_{it} + \beta_2 \ln(Inv_{it}) + \beta_3 \ln(pop_{it}) + \mu_i + \gamma_t + \varepsilon_{it}$$

where μ_i represents province-specific fixed effects (unobserved heterogeneity), and γ_t captures year fixed effects (national shocks)

3.4. Estimation Strategy and Diagnostic Tests

To obtain consistent and unbiased estimation results, several procedures are performed: (1) Initial Estimation, including pooled OLS estimation as a benchmark, followed by the estimation of the Fixed Effects Model (FEM) and the Random Effects Model (REM); (2) Model Selection Tests to determine the most appropriate panel regression specification: Chow Test (F-test for cross-section fixed effects) to assess whether FEM is superior to pooled OLS, Breusch–Pagan Lagrange Multiplier (LM) Test to evaluate whether REM is preferable to pooled OLS, and Hausman Test to determine whether FEM or REM provides the most consistent estimates.

4. Results and Discussion

4.1. Results

4.1.1. Descriptive Statistics

Table 2. Descriptive Statistics

Variable	Mean	Median	Max	Min	Std. Deviation	Jarque–Bera	Probability
Ln_Pdrb_pc	3.6	3.6	6.2	1.1	1.2	0.3	0.86
ID	77.3	78.0	85.6	62.9	4.7	13.5	0.00
Ln Inv	9.0	8.9	11.5	6.0	1.2	0.0	0.98

Ln_Pop	8.4	8.3	10.8	6.6	1.0	7.4	0.03
Ln_Cgt_pc	19.1	19.3	21.4	14.3	1.3	32.0	0.00

Source: Author’s Analysis (2025)

Based on the descriptive statistics, the variables used in this study exhibit well-distributed data with no indication of extreme outliers. The mean and median values for each variable demonstrate relatively stable distributions across provinces. Furthermore, the Jarque–Bera test results indicate that the variables *ln_pdrb_pc* and *ln_inv* exhibit distributions that are close to normal, making them highly suitable for panel regression estimation. Although the variables *ID*, *ln_pop*, and *ln_cgt_pc* display non-normal distributions, such patterns are common in macro–regional datasets and do not undermine the validity of the panel-data estimation model. Therefore, the descriptive statistical results support the use of these variables within a consistent panel-data econometric framework.

4.1.2. Model Selection Tests

This analysis involves selecting the most appropriate panel-data model between the Fixed Effects Model (FEM) and the Random Effects Model (REM), using the Chow Test to assess the significance of fixed effects and the Breusch–Pagan Lagrange Multiplier (LM) Test to evaluate the significance of random effects. Based on Table 3.1, the probability values for both the F-test and the Chi-square test are 0.000. These probability values are below the threshold of 0.005 ($0.000 < 0.005$). Therefore, the Fixed Effects Model is preferred over the Pooled OLS Model.

Furthermore, the Hausman Test results (Table 3) show a probability value below 0.05, specifically $0.000 < 0.05$, indicating that the Fixed Effects Model provides the most consistent and reliable estimation. Thus, the Fixed Effects Model is identified as the optimal model for this study.

Table 3. Results of the Chow Test (Fixed Effects Test)

Test Type	Statistic	d.f.	Prob.
Cross-section F	158.135539	(32,60)	0.0000
Cross-section Chi-square	431.323209	32	0.0000

Source: Author’s Analysis (2025)

Table 4. Results of the Breusch–Pagan LM Test (Random Effects Test)

Test Type	Chi-Sq. Statistik	Chi-Sq. d.f.	Prob.
Cross-section Random	121.355114	4	0.0000

Source: Author’s Analysis (2025)

4.1.3. Hypothesis Testing

This analysis presents empirical findings based on the panel data OLS estimation using the Fixed Effects Model for the period 2021–2023. The estimation model aims to provide conclusions regarding the research hypotheses. The results are summarized in the following table.

Table 5. Fixed Effects Panel Regression Results (2021–2023)

Variabel	Koefisien	Std. Error	t-Statistik	p-Value
Konstanta (C)	12.47647	1.032250	12.0867	0.0000
ID	0.005287	0.003556	1.4868	0.1423
LN_INV	0.055558	0.025440	2.1839	0.0329
LN_POP	-1.109867	0.116637	-9.5156	0.0000
LN_CGT_PC	-0.023690	0.011467	-2.0660	0.0432

Source: Author’s Analysis (2025)

The Fixed Effects Model estimation results indicate that investment is the primary factor or key determinants driving improvements in regional economic performance. This is evidenced by the coefficient value of 0.0556, which implies that a 1% increase in investment leads to a 0.0556% increase in regional economic performance. Meanwhile, demographic factors, particularly population size, act as a strong weakening force, as reflected by the negative coefficient of -1.1099 . This suggests that population growth reduces regional economic performance by more than 1.10%. In terms of fiscal policy, central government transfers per capita exert a negative influence, with a coefficient of -0.0237 , indicating that fiscal spending has not been effective in enhancing regional economic performance. In addition, the democracy variable does not exhibit a statistically significant effect on regional economic performance. Overall, these findings suggest that capital accumulation consistently contributes to regional economic improvement, whereas demographic and fiscal variables do not show statistically significant contributions.

4.2. Discussion

Drawing from the Fixed Effects Model estimation for the 2021–2023 period, the overall picture is relatively clear: democracy, as measured by the Indonesian Democracy Index, does not exhibit a significant direct effect on regional economic performance, whereas investment consistently emerges as a statistically significant driver of increases in GRDP per capita. At the same time, population size and central government transfers per capita tend to correlate negatively with economic performance, suggesting that demographic pressures and less productive fiscal design may weaken development outcomes even within a democratic and decentralized governance framework.

This configuration of results situates the study in direct dialogue with the literature that highlights the ambiguous nature of the democracy growth relationship, as well as the central role of capital accumulation in driving regional economic performance in developing countries. Accordingly, the subsequent discussion centers on two key points: first, how to interpret the non-significant relationship between democracy and regional economic performance over the short-term horizon; and second, the extent to which investment functions as the primary mechanism that “translates” institutional structures and policy frameworks into measurable economic growth at the provincial level.

4.2.1. Democracy and Regional Economic Performance

The estimation results indicate that the democracy variable does not have a significant effect on regional economic performance over the 2021–2023 period. This statistically insignificant coefficient must be interpreted carefully: it does not imply that democracy is “economically irrelevant,” but rather that interprovincial and intertemporal variations in the Indonesian Democracy Index (IDI) during this relatively short period were not strong enough to translate into statistically measurable differences in GRDP per capita. This finding aligns with studies by Iskandar and Subekan (2019) and Yangailo (2025), which position democracy as a deep determinant operating through long-term channels such as human capital accumulation, the quality of public policy, and institutional stability effects that typically manifest over longer horizons than the three-year panel examined here.

In the Indonesian context, these results are consistent with evidence showing that the democracy growth relationship is heterogeneous and non-linear. Jamil et al. (2022) demonstrate that democracy contributes positively to growth only in certain groups of provinces, while in others its influence is weak or insignificant implying that a “one size fits all” institutional design does not apply (Yangailo, 2025). Other studies suggest that democracy gains stronger explanatory power when examined jointly with fiscal capacity rather than in isolation, as their interaction determines the scope for development policy and the quality of public expenditure (Bardhan, 2016). More broadly, cross-country meta-analyses also report mixed findings positive, negative, and insignificant effects with many emphasizing enabling conditions such as political stability, bureaucratic capacity, and regulatory quality (Iskandar & Subekan, 2019; Yangailo, 2025).

The characteristics of the democracy indicator used in this study further help explain the weak direct effect on regional economic performance. The post-reformulated IDI places emphasis on three dimension freedom, equality, and the role of state institutions all essential for political legitimacy and citizens’ rights, yet not all of which directly relate to the variables most relevant to business decisions, such as contract certainty, licensing efficiency, or regulatory consistency. Recent studies reveal that even at the cross-country level, democracy promotes innovation and productive capital accumulation only when accompanied by improvements in governance quality and technocratic capacity; without these, increases in political freedoms and competition do not automatically translate into productivity gains or expanded private investment (Ahmed et al., 2024). In short, increases in democratic scores do not necessarily reflect improvements in the institutional dimensions most relevant for short-term investment decisions.

The insignificance of democracy in the fixed effects model may also indicate that, during the short post-pandemic period, interprovincial variation in “proximal” factors such as investment, sectoral composition, and crisis recovery capacity played a much more decisive role in shaping economic performance than marginal differences in democratic quality. This interpretation is consistent with findings by Iskandar and Subekan (2019), who document complex cointegrating dynamics between democracy, growth, and political stability in Indonesia, with evidence suggesting that strong economic performance often acts as a prerequisite for democratic consolidation rather than the other way around. Studies across Asian regions similarly show that democracy’s impact on growth depends on political stability and the structure of public spending; without fiscal discipline and a bias toward public investment, democracy does not consistently generate accelerated economic growth (Hasan et al., 2025).

Taken together, the non-significant effect of democracy in this panel estimation is best understood as reflecting two key points. First, democracy operates through long-term channels and interacts strongly with fiscal capacity and governance quality, making its contribution difficult to detect within the short 2021–2023 observation window. Second, within Indonesia’s current institutional configuration, variation in IDI scores across provinces has not yet become a primary differentiator of economic performance compared to factors such as investment, economic structure, and local fiscal management quality. These findings open avenues for further research, including extending the time horizon, testing threshold effects, or modeling democracy not only as a level variable but also through its interactions with investment, fiscal capacity, and governance-quality indicators.

4.2.2. Investment as a Driver of Regional Economic Performance

In contrast to democracy, the estimation results show that investment consistently emerges as a positive and statistically significant determinant of regional economic performance. The investment coefficient is not only statistically significant but also economically meaningful: provinces capable of attracting and accumulating greater levels of investment tend to record higher real GRDP per capita during the 2021–2023 period. This finding aligns with the basic intuition of growth theory: additional physical capital expands production capacity, accelerates technological adoption, and enhances labor productivity. In the short post-pandemic horizon, when many provinces were still undergoing recovery, differences in the speed of investment rebound naturally became a major distinguishing factor in growth performance across regions.

This pattern is strongly consistent with recent empirical evidence in Indonesia. Nur et al. (2019) show that both foreign direct investment (FDI) and domestic direct investment (DDI) positively affect regional economic growth while serving as channels for interprovincial income convergence. Fazaalloh (2024), using provincial–sectoral data, finds that FDI generally promotes growth across 33 Indonesian provinces, with particularly strong effects in technology-intensive manufacturing and service sectors. Similarly, Arum and Kaluge (2025) confirm that both foreign and domestic investment significantly contribute to growth, though the magnitude varies across provinces, reflecting differences in economic bases and local institutional capacity. Yuliana et al. (2019) also show that FDI and domestic investment positively influence GRDP growth and are closely associated with the broader agenda of sustainable industrialization (SDG 9).

International literature provides a comparable picture. Chizema (2025) demonstrates that FDI contributes significantly to growth in South and Southeast Asia even after controlling macro-level factors such as trade openness and macroeconomic stability. Sijabat (2022) finds a long-run relationship among GDP, FDI, foreign aid, and gross fixed capital formation in Indonesia, highlighting investment flows as part of a core set of variables supporting long-term growth through the capital accumulation channel. At the provincial level in other developing countries, Nguyen et al. (2019) similarly find that investment strongly and positively affects provincial economic growth in Vietnam, regardless of variations in fiscal decentralization design. Taken together, these findings help explain why, when democracy, fiscal transfers, and demographic factors are included in the empirical model, investment remains the “closest engine” most visibly linked to increases in GRDP per capita.

Mechanistically, this study’s findings can be understood through several channels. First, investment expands the stock of productive capital factories, warehouses, and supporting infrastructure which directly increases regional output capacity. Second, particularly for FDI and large-scale domestic investment, there is an embodied technology effect: production technologies, managerial practices, and higher-quality standards are transferred along with the investment projects. Fazaalloh (2024) shows that in Indonesia, these effects are strongest in sectors more integrated into global value chains. Third, investment often generates agglomeration effects: the presence of one or two major projects can attract suppliers, support services, and small–medium enterprises that strengthen the local economic base. Under such

conditions, even if democracy and governance operate “in the background” by shaping the business climate, the variable most immediately captured by short-term growth models is investment realization itself.

The findings of this study also align with evidence showing that the effectiveness of fiscal instruments depends largely on the extent to which public spending supports both public and private investment. Basuki et al. (2020) find that the combination of appropriate fiscal policy and FDI can enhance regional economic growth in Indonesia, especially when government spending is directed toward infrastructure and productive sectors. Zein et al. (2024) further show that local government financial performance and capital expenditure positively influence growth in Banten Province, indicating that fiscal capacity and local budget management quality function as complements do not substitute for investment flows. Within this framework, the study’s finding that central transfers per capita and population are insignificant, while investment is significant, can be interpreted as evidence that “spending capacity” alone does not translate into growth unless it is converted into productive investment at the regional level.

From a policy perspective, the implications are straightforward. In a short horizon such as 2021–2023, characterized by limited fiscal space and heightened global uncertainty, a province’s ability to maintain and expand investment flows becomes the primary differentiator of economic performance. Democracy and decentralization remain essential as institutional foundations that ensure predictable “rules of the game,” yet without a clear strategy to improve the investment climate through streamlined licensing, adequate infrastructure, and regulatory certainty the contribution of democracy to growth will be difficult to observe in the data. The finding that investment consistently drives regional economic performance, while democracy is not significant in the short term, reinforces the argument that Indonesia’s institutional-strengthening agenda must be explicitly paired with a strategy for promoting high-quality investment to ensure that the political gains from democratization are effectively transformed into economic progress at the provincial level.

5. Conclusion

This study demonstrates that, within the short 2021–2023 horizon, democracy as proxied by the Indonesian Democracy Index does not exert a significant direct effect on regional economic performance, whereas investment emerges as the most consistent and significant determinant of provincial real GRDP per capita. Provinces that were more successful in attracting and accumulating investment experienced relatively stronger economic performance, whereas variations in democratic scores, central government transfers per capita, and population did not appear to be major differentiating factors across regions during this highly dynamic post-pandemic period. These findings reinforce the view that democracy functions primarily as a deep determinant operating through long-term channels, while in the short run, the most “visible” engine of growth in the data remains productive capital accumulation.

From a policy perspective, the implications are clear: strengthening democracy and fiscal decentralization remains essential as a governance foundation, but these will not automatically lead to improved regional economic performance without credible strategies to enhance the investment climate and direct fiscal transfers toward productive expenditure. Bureaucratic reform, regulatory certainty, infrastructure quality, and provincial-level planning capacity are crucial for ensuring that democracy develops meaningful economic transmission channels. At the same time, the findings of this study must be interpreted with awareness of its limitations, particularly the short observation horizon and the use of a single aggregate democracy indicator. Future research with longer time spans, richer institutional indicators, and more dynamic model specifications is necessary to more fully capture how democracy and investment jointly shape regional development trajectories in Indonesia.

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