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Analysis of Indonesian Economic Growth using System Generalized Method of Moment

By:
Gilang Ramadhan[1)], Duwi Yunitasari[1*)], Teguh Hadi Priyono[1)]
[1]Faculty of Economic and Business, Jember University
[*)]Corresponding author: duwiyunita.feb@unej.ac.id

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ABSTRACT: This study aims to examine the short-term and long-term impacts of household consumption, domestic investment, foreign investment, and government expenditure on regional economic growth across 34 provinces in Indonesia from 2013 to 2022. The method employed is dynamic panel regression using the System Generalized Method of Moments (SYS-GMM). Our result shows that household consumption significantly and positively affects regional economic growth in both the short and long-term. Domestic investment shows a positive impact but is not statistically significant in either the short or long-term. Conversely, foreign investment exhibits a negative impact that is also not statistically significant over both time horizons. Government expenditure demonstrates a positive and significant impact on regional economic growth in both the short and long-term. Effective government policies are therefore necessary across the 34 provinces to foster both domestic and foreign investment.

Keywords: Economic Growth, Household Consumption, Investment, Goverment Expenditure, System GMM

ABSTRAK: *Penelitian ini bertujuan untuk menguji dampak jangka pendek dan jangka panjang dari Konsumsi Rumah Tangga, Investasi Dalam Negeri, Investasi Asing, dan Pengeluaran Pemerintah terhadap Pertumbuhan Ekonomi Daerah di 34 provinsi di Indonesia dari tahun 2013 hingga 2022. Metode yang digunakan adalah regresi panel dinamis dengan menggunakan System Generalized Method of Moment (SYS-GMM). Hasil kami menunjukkan bahwa Konsumsi Rumah Tangga secara signifikan dan positif mempengaruhi pertumbuhan ekonomi regional baik dalam jangka pendek maupun jangka panjang. Investasi Dalam Negeri menunjukkan dampak positif tetapi tidak signifikan secara statistik baik dalam jangka pendek maupun jangka panjang. Sebaliknya, Investasi Asing menunjukkan dampak negatif yang juga tidak signifikan secara statistik baik dalam jangka pendek maupun jangka panjang. Variabel yang secara statistik tidak signifikan berarti bahwa variabel tersebut tidak berdampak pada variabel dependen. Pengeluaran Pemerintah menunjukkan dampak positif dan signifikan terhadap pertumbuhan ekonomi regional baik dalam jangka pendek maupun jangka panjang. Oleh karena itu, kebijakan pemerintah yang efektif diperlukan di 34 provinsi untuk mendorong investasi dalam negeri dan asing.*

Kata Kunci: *Pertumbuhan Ekonomi, Konsumsi Rumah Tangga, Investasi, Pengeluaran Pemerintah, System GMM*

INTRODUCTION

Economic growth serves as an indicator of the success of a region's economy. An increase in economic growth reflects the development of the economy in that region (Yuni, 2021). According to Keynes, economic growth is influenced by aggregate expenditure, which includes household consumption, investment, and government spending (Minarni, 2021). High household consumption signifies demand for goods and services, driving economic activity. Domestic and foreign investments also affect economic growth. Government spending including regional budgets, influences economic growth through the allocation of regional spending funds.

Based on Statistics Indonesia data that economy of Indonesia's 34 provinces during the 2013 to 2022 period tended to be fluctuating. The year 2013 marked four years after the global crisis of 2008. The year 2013 was full of challenges and changes, with economic growth slowly stabilizing at both the national and provincial levels (Bank Indonesia, 2014). Economic growth declined in 2013 to 2014, influenced by the presidential election phenomenon, which created political uncertainty in Indonesia that made investors hesitate to invest, because they were worried about economic stability and policies that would be taken by the elected government. where the election process hindered investors from investing in Indonesia. Other phenomena influencing Indonesia's economic growth from 2013 to 2022 trade war conflict between the United States and China in 2018. The trade war conflict between the United States and China in 2018 affected Indonesia's economic growth because trade tensions between the world's two largest economies disrupted global market stability. When the US and China imposed high import tariffs on each other, there was a decline in international trade, which affected countries that had close trade relations with both countries, including Indonesia. Indonesia's export sector, especially commodities such as coal, palm oil, and textile products, experienced a decline in demand due to disruptions to the global market. In addition, uncertainty due to the trade war caused investors to shift their portfolios, affecting investment flows into Indonesia. This tension also increased the cost of importing goods from China, which had an impact on inflation and people's purchasing power and the outbreak of the Covid-19 outbreak in 2020 to 2021 also affected Indonesia's economic growth. The trade war made it difficult for Indonesia to attract foreign investors. The Covid-19 period in 2020 to 2021 also hindered Indonesia's economy due to restrictions on economic activities in various sectors.

Household consumption has a significant impact on driving economic growth. Household spending plays a major role in driving economic growth in Indonesia. An increase in household consumption indicates growth in demand for goods and services, which further stimulates economic activity. This research is supported by research by (Rasnino et al., 2022) which states that household consumption variables have a positive effect on economic growth in Indonesia. Relationship between investment and economic growth is a sustained macroeconomic phenomenon. Development economists are always interested in understanding the key factors contributing to the investment process because investment plays a central role in neoclassical theory (Shabbir, 2021).

Theoretically, investment also affects economic growth. The impact of investment depends on the economic policies implemented. Both domestic and foreign investments are factors influencing economic growth. This research is supported by research by Zainuri et al., (2022) indicating that the domestic investment variable significantly enhances economic growth. Additionally, research Fadia Haya et al., (2022) shows that foreign investment has a significant positive effect on economic growth. Foreign investment is also important in increasing economic growth. The influx of foreign investment can encourage regional economic growth (Xuan et al., 2024) and Foreign investment is an efficient investment in influencing economic growth (Raza et al., 2023). The most significant impact is in stimulating capital formation through savings and investment. The need for foreign investment arises due to changes in the global economic structure and competition between countries. Most importantly, this is due to differences in the level of economic development in various countries. Less developed economies, developing economies, or transitioning economies rely on foreign capital to expedite their economic growth (Nistor, 2014). The relationship between foreign investment and economic growth has been widely examined in academic literature, including researches by Al et al., (2023) and Balsalobre & Ali (2020). Likewise, foreign investment has been researched for its role in promoting economic growth by boosting domestic capital (Aghasafari, 2021) and (Esmaeili, 2023).

Apart from household consumption and investment, Region's economic growth is also influenced by government expenditure, in this case, local government expenditure. The role of government expenditure variables also plays a crucial role in influencing regional economic growth (Ridzuan et al., 2014). There is an extensive body of literature spanning several centuries that examines government expenditure and economic growth, with sustained interest in this topic over time. Many of these studies explore the relationship between government spending and economic growth (Petchko, 2018). Local government expenditure includes regional spending used to support regional economic growth. This is backed by research conducted by Soleh & Anitasari (2015) indicates that government expenditure variable positively influences economic growth. The connection between government spending and economic growth has been a central focus in economic growth literature, both in theoretical frameworks and empirical studies. This discussion has also sparked ongoing debates among scholars about its impacts (Lahirushan & Gunasekara, 2015). The composition of government spending differs greatly between countries and has undergone substantial changes worldwide over time (Chen et al., 2019).

The aim of this study is to examine how household consumption, domestic investment, foreign investment, and government expenditure affect economic growth over both the short and long terms across 34 provinces. Previous studies have not comprehensively addressed the influence of variables overall, typically focusing on a single variable and using different estimators. The sample regions used are at a micro scale, involving only one province. Furthermore, static panel estimators were used, limiting the research findings to the study period and unable to analyze the interconnections across previous study years. This research differs from previous studies in several respects: it uses a more diverse dataset covering 34 provinces in Indonesia, incorporates more recent data from 2013 to 2022, examines three aggregate expenditure variables in relation to economic growth, considers the underlying phenomena affecting economic growth during the period from 2013 to 2022, and employs a dynamic panel estimator namely system GMM, to analyze the relationships from previous years and the short-term and long-term impacts of independent variables on the dependent variable. The hypotheses suggest that each of these variables household consumption, domestic investment, foreign investment, and government expenditure significantly positively affect to economic growth

METHODS

Data sourced from Statistics Indonesia will be employed to investigate the impact of household consumption, domestic and foreign investments, and government expenditure on economic growth across 34 provinces from 2013 to 2022. The year 2013 was four years after the 2008 global crisis. 2013 was a year of challenges and changes, economic growth slowly began to stabilize both at the national and provincial levels. Economic growth experienced a decline in 2013 - 2014 which was motivated by the phenomenon of presidential elections (elections), the elections hampered investors to invest in Indonesia. Another phenomenon behind Indonesia's economic growth in the period 2013-2022 is the trade war between the United States and China in 2018 and Covid-19 in 2020-2021. The existence of a trade war makes it difficult for Indonesia to attract foreign investors to invest in Indonesia. The Covid-19 period in 2020-2021 also hampered the Indonesian economy due to restrictions on economic activities in various sectors.

The data analysis employs GMM estimator. GMM extends the method of moments by integrating population moment conditions with sample moment conditions. The System GMM estimator, developed through research by Arellano & Bover (1995) and further refined by Blundell and Bond, (1998), that combines moment conditions using first differences with lagged levels as instrumental variables, leading to improved outcomes compared to the first difference model. According to Blundell and Bond, (1998) as referenced in Fukase (2010), the First Difference estimator shows limited performance with small-scale data because lagged levels offer weak instruments for estimation. SYS-GMM models are utilized to mitigate endogeneity concerns in panel data, where endogeneity refers to the impact of an independent variable on the dependent variable that cannot be explained due to its correlation with the error term. Endogeneity can lead to bias or deviations in results that cannot be explained by statistical tests (Cooper et al., 2020). In research, endogeneity can occur due to omitted variables and improper sample selection (Antonakis et al., 2010). Endogeneity

can be addressed by using instrumental variables (IV), which are correlated with independent variable but not directly related to dependent variable. SYS-GMM approach uses lagged dependent variables as independent variables or predictors in the model (Gujarati, 2004). Lag in a dynamic model analyzes the relationship of dependent variable with previous period. The dynamic panel approach uses lag as an instrumental variable (IV). The use of dynamic panel data is based on two reasons. Firstly, this approach is employed as an estimator that allows for comparison and evaluation of results. Secondly, it serves as an alternative way when other estimators such as maximum likelihood cannot be used. According to (Nickell 1981 in Oseni 2016), the GMM is used in dynamic panel models because the fixed effects estimator cannot be applied when the time period (T) is shorter than the number of cross sections (N). Therefore, GMM estimators develop by Arellano and Bond (1991) and instrumental variable estimators (IV) develop by Anderson & Hsiao (1982) are utilized to address this issue. There are three criteria for determining the best GMM model

1. Valid instruments, this indicates that there is no correlation between instrumental variables and error component. This is assessed using the Sargan test.
2. Consistency, to assess consistency of estimation results and ensure error term is not correlated with AR (2) or second-order autoregression, thus avoiding autocorrelation. This is determined through Arellano-Bond test. Second-order or AR (2) should be insignificant or fail to reject H_0 at α = 5% (0.05) level.
3. Unbiased, comparing coefficient values of lagged dependent variables in the GMM between the Fixed Effect Model (FEM) estimator and Pooled Least Squares (PLS) estimator. Coefficient value of lagged dependent variable in System GMM estimator ought to be between that of fixed effects and pooled least squares.

Equation of dynamic panel regression model is based on references from studies of (Caselli et al., 1996in Fukase, 2010). The equation of the dynamic panel regression model can be stated as follows:

$$Y_{i,t} - Y_{i(t-é)} = \beta Y_{i(t-é)} + X_{it}\gamma + \zeta_t + \eta_i + v_{it} \quad \text{..... (1)}$$

In the equation, $Y_{i,t}$ represents the dependent variable where i denotes cross-sectional units and t denotes time series. X_{it} represents the independent variables, ζ_t denotes the specific time effect, η_i represents the specific province effect, and v_{it} is the error term. Equation 1 can be formulated into a dynamic equation by incorporating the lagged dependent variable $Y_{i,(t-1)}$. The equation is structured as follows:

$$Y_{i,t} = \alpha Y_{i,(t-1)} + X_{it}\gamma + \zeta_t + \eta_i + v_{it} \quad \text{..... (2)}$$

$$PEP_{i,t} = \alpha PEP_{i(t-1)} + LnKRT_{it} + LnPMDN_{it} + LnPMA_{it} + LnPP_{it} + \zeta_t + \eta_i + v_{it} \quad \text{..... (2a)}$$

PEP represents provincial economic growth as dependent variable, α is the intercept, LnKRT denotes household consumption in natural logarithms as an independent variable, LnPMDN stands for domestic investment in natural logarithms as an independent variable, LnPMA represents foreign investment in natural logarithms as an independent variable, and LnPP indicates government expenditure in natural logarithms as an independent variable. In Equation 2, there exists a specific province effect η_i, known that coefficient of lagged dependent variable in OLS estimation will incur bias due to positive correlation with η_i (Blundell and Bond, 1998). One approach to tackle η_i is transforming to a fixed effects estimation model. Transformation involves taking deviations from the time series variables in each province, then transforming into an OLS estimation model. This transformation can eliminate specific province effect η_i. (Arellano and Bond, 1991) provide an alternative to address endogeneity in the model by using GMM estimation model, where GMM eliminates specific province effect η_i and utilizes lagged dependent variables as instruments. The GMM model equation is as follows:

$$\Delta Y_{it} = \alpha \Delta Y_{i(t-1)} + \Delta X_{it}\gamma + \Delta\zeta_t + \Delta v_{it} \quad \text{..... (3)}$$

$$\Delta PEP_{it} = \alpha \Delta PEP_{i(t-1)} + \Delta LnKRT_{it}\gamma + \Delta LnPMDN_{it}\gamma + \Delta LnPMA_{it}\gamma + \Delta LnPP_{it}\gamma + \Delta\zeta_t + \Delta v_{it} \quad \text{..... (3a)}$$

In Equation 3, $\Delta Y_{i(t-1)}$ is correlated with Δv_{it}, causing equation become inconsistent. Lagged levels of Y_{it} can be used as instruments, such as $\Delta Y_{i(t-2)}$, because $\Delta Y_{i(t-2)}$ correlates with $\Delta Y_{i(t-1)}$ but not with Δv_{it}. Assuming X_{it} may correlate with Δv_{it}, the relevant moments are:

$$E\,[Y_{i,t-n} - Y_{i,t-n-1})\,(v_i - \varepsilon_{it}) = 0 \text{ for } n = 1 \quad \ldots\ldots (4)$$

$$E\,[X_{i,t-n} - X_{i,t-n-1})\,(v_i - \varepsilon_{it}) = 0 \text{ for } n = 1 \quad \ldots\ldots (5)$$

The equation above illustrates that lagged variables are employed as instruments for endogenous variables, assuming that lag is uncorrelated with error term and there is no autocorrelation, and independent variable X_{it} is also uncorrelated with error term (Ibrahim & Arundina, 2022). The System GMM estimator can employ both one-step and two-step approaches. One step estimation involves parameter estimation using moment conditions. This approach is simpler but less efficient compared to two step estimation. Two-step estimation tends to be biased downward, particularly when used with small samples (Windmeijer, 2005). In this study, one step estimation is used due to small sample size.

Table 1. Operational Definition Variabel

Variable Code and Label	Variable Definition	Source
Dependent Variable		
PEP Economic Growth (Percent)	Economic growth of 34 provinces measured through Gross Regional Domestic Product (GRDP) bases on constan prices 2010	Statistics Indonesia
Independent Variable		
LnKRT Household Consumption (Rupiah)	Household consumption of 34 provinces encompassing both food and non-food consumption	Statistics Indonesia
LnPMDN Domestic Investment (Billions Rupiah)	Domestic investment of 34 provinces based on realized domestic investment.	Statistics Indonesia
LnPMA Foreign Investment (Millions US$)	Foreign investment of 34 provinces based on realized foreign investment.	Statistics Indonesia
LnPP	Government expenditure of 34 provinces known through regional budget allocations	Statistics Indonesia
Goverment Expenditure (Billions Rupiah)		

Sources: Statistics Indonesia

RESULTS AND DISCUSSIONS

Table 2 compares that estimation result obtained using Firts Difference GMM, System GMM, Fixed Effects, and Pooled Least Squares methods. Results from dynamic panel data indicate System GMM model performs the best. This finding aligns with research by Blundell and Bond, which suggests that First Difference estimation often yields poor results in small sample sizes (Blundell and Bond, 1998).

Sargan test results show a value greater than α = 5% (0.05), indicating that the first condition is met, meaning instruments are valid. The Sargan test hypothesis can be formulated as follows: H0 = The variable instrumental conditions in the model estimation are valid, H1 = The variable instrument conditions in the model estimation are invalid. The decision is that H0 is rejected if the value of the Sargan test statistic is greater than the chi-square or the p-value is less than α. If the p-value is less than α (5% = 0.05) then the data occurs heteroscedasticity. Before conducting Arellano-Bond test, it is necessary to check robustness standard errors from the First Difference and System GMM estimations to strengthen model against heteroskedasticity and autocorrelation (Ibrahim & Arundina, 2022). Once robustness standard errors is verified, the Arellano-Bond test can proceed. The Arellano-Bond test results show a value greater than α = 5% (0.05), indicating that the second condition is met, meaning the model is consistent. Third condition is also fulfilled, that model is unbiased, as indicated by lagged dependent variable coefficient in System GMM falling between those of Fixed Effect and Pooled Least Squares. All three conditions are satisfied in determining the best GMM model.

Table 2. Estimation Result

Variable	First Difference GMM	System GMM	Fixed Effect	Pooled Least Square
Constant	-25.89757	-12.02686	-16.8287	-18.89622
	(0.229)	(0.572)	(0.664)	(0.620)
$PEP_{i,t-1}$	0.2593497	0.2492543	0.2470942	0.2533138
	(0.000)	(0.000)	(0.000)	(0.000)
LnKRT	9.656695	11.42675	9.510485	10.05854
	(0.021)	(0.012)	(0.019)	(0.009)
LnPMDN	6.737015	4.785284	5.676806	5.943115
	(0.130)	(0.288)	(0.153)	(0.124)
LnPMA	-0.5360808	-1.732411	-0.9496038	-0.7134681
	(0.902)	(0.709)	(0.812)	(0.854)
LnPP	10.32113	9.128367	10.40398	9.615777
	(0.000)	(0.000)	(0.010)	(0.013)
Sargan Test	0.2874	0.0676	-	-
Arellano-Bond Test	-		-	-
For AR(1)	0.0024	0.0022	-	-
For AR (2)	0.6643	0.6539	-	-

Information: $p<0.05$, $p<0.01$, $p<0.001$
Sources: Calculation on Stata

After fulfilling all conditions in dynamic panel regression using SYS-GMM estimation, selected model for this analysis is as follows:

$$PEP_{i,t} = -12.02686 + 0.2492543PEP_{i,t-1} + 11.42675LnKRT_{i,t} + 4.785284LnPMDN_{i,t} - 1.732411LnPMA_{i,t} + 9.128367LnPP_{i,t} \quad \text{..... (6)}$$

GMM estimation can also illustrate the immediate and prolonged impacts short-term and long-term of independent variables on dependent variable. These effects are indicated by the coefficients of independent variables derived from the robust standard error results of System GMM estimation. The estimated short-term/long-term effects are as follows:

Table 3. Short-Term Effect and Long-Term Effect System GMM Estimation

Variable	Coefficient Long-term Effect	*p value* Long-term Effect
$PEP_{i,t-1}$	-	-
LnKRT	15.22053	0.020
LnPMDN	6.374041	0.300
LnPMA	-2.307587	0.715
LnPP	12.15907	0.001

Sources: Calculation on Stata

Parameter sign for household consumption in the short as indicated by Table 2 is positive, and p-value is less than α (5% = 0.05), showing a notable positive impact on economic growth. The immediate effect of household consumption is 11.42675, suggesting that 1% increase in household consumption will increase short-term economic growth by 0.1142%. Long-term effect of household consumption is 15.22053, indicating that 1% increase in household consumption will increase long-term economic growth by 0,1522%. This research aligns with hypothesis that household consumption has a significant positive effect on economic growth. An increase in household consumption is expected to enhance economic growth both in the short and long term across 34 provinces. This study is consistent with Keynesian consumption theory, which asserts that consumption levels comprise largest portion of total aggregate expenditure in a region. Household consumption plays the foremost role in sustaining economic growth (Ridzuan et al., 2014). Increased household consumption positively impacts economic growth. This research also corroborates findings by (Hakib, 2019), indicating a significant annual increase in household consumption rates across various provinces. Increasing household consumption is an effective way to sustain the economic growth of a region (Liu et al.,

2018). Consumption patterns of elderly households can create patterns of change and contribute to domestic demand (Xie, 2024). Thus, consistent growth in household consumption plays a crucial role in driving provincial economic growth. Household consumption significantly contributes to regional economic growth, making it a key component influencing economic expansion (Wiranthi, 2014). Household consumption affects both short-term and long-term economic growth; an increase stimulates demand for goods and services and encourages increased production (Prawoto & Tri Basuki, 2020). Per capita household consumption rates (monthly) have risen annually in all provinces, encompassing both food and non-food consumption. Household consumption remains a primary necessity for communities, essential to meet despite fluctuations in prices of goods and services. From 2013 to 2022, household consumption rates in all 34 provinces showed an upward trend, even in 2020, where there was a slight increase despite not being statistically significant.The highest consumption of the 34 provinces is DKI Jakarta province, which has increased every year, in 2013 with an average consumption per month of Rp 1,528,429 and in 2022 with an average consumption per month of Rp 2,525,347. While the lowest consumption of 34 provinces is East Nusa Tenggara province with an average monthly consumption of Rp 432,053 in 2013, consumption increases every year until 2022 with an average consumption of Rp 884,102. The size of household consumption is influenced by increases in food and non-food prices, as well as differences in the needs of each household (Central Bureau of Statistics, 2022).

Parameter sign for domestic investment in the short term is positive, and p-value is greater than α (5% = 0.05), indicating a non-significant positive effect on economic growth. Insignificance of investment effects indicates need for policies aimed at driving economic growth. While domestic investment shows a positive effect, it is not significant, suggesting that domestic investment has a minor influence on economic growth during period from 2013 to 2022. Increased investment is a driver of long-term economic growth. This explains how investment did not significantly impact both the short and long terms, as economic growth indicators in a region are observed over specific periods (Wilantari et al., 2020). These research period from 2013 to 2022 saw varying investment values across 34 provinces and disparities in the allocation of investments to different sectors, indicating suboptimal investment management (Irijanto, T. T., & Lestari, 2022). During 2013 to 2022 period, domestic investment values increased in several provinces, yet economic growth declined. Suboptimal domestic investment allocation can influence economic growth. Insignificant positive impact of domestic investment is also influenced by Covid-19 phenomenon in 2020 to 2021, domestic investment increased while economic growth declined (Fadia Haya et al., 2022). In the research by (Asiyan, 2020), it is stated that the insignificant impact of investment is due to fluctuations in domestic investment growth, indicating that domestic investor confidence to invest capital in several regions in Indonesia remains low.

Parameter sign for foreign investment in the short term is negative, and p-value is greater than α (5% = 0.05), indicates a negative and insignificant effect on economic growth. These research reject hypotheses. In some cases, foreign investment can have a negative impact on economic growth due to influences from open market conditions and varying human resources (Almfraji & Almsafir, 2014). Foreign investment has a non-significant negative impact in both the short and long terms, suggesting that foreign investment can also lead to unfavorable effects on economic growth. One example is when foreign investment flows into non-productive sectors and consumtiptive sectors. Consequently, capital and its returns are repatriated abroad, ultimately having a negative impact on the economy (Alvaro, 2021). In 2020-2021, foreign investment inflows could not be optimally allocated due to the Covid-19 pandemic viruses, resulting in a decline in economic growth, even turning negative. One of the reasons why foreign investment cannot be allocated optimally is due to the Covid-19 pandemic virus. Where there are restrictions on large-scale activities/businesses. Implementation of recovery and economic strengthening strategies across 34 provinces in Indonesia through FDI sectors contributed to the economic downturn. During the Covid-19 period, each province was responsible for two aspects. First, addressing local communities through Covid-19 mitigation efforts and policies to maintain regional economic stability. Second, implementing central government-led economic recovery and strengthening policies; however, not all provinces were able to execute these policies due to varying capacities among provinces. Hence, this resulted in foreign investment sector having a

non-significant impact on economic growth in the 34 provinces (Immurana, 2020). Covid-19 pandemic has had a significant impact on the global economy, including Indonesia. Several studies have explored the pandemic's effects on foreign investment in developing countries, such as Indonesia. They examine how economic policy uncertainty affects foreign investment inflows during the pandemic. The implementation of economic recovery and strengthening policies promoted by the central government, but not all provinces are able to implement these policies due to different factors in each province. So this is what causes the FDI sector to have an insignificant negative impact on economic growth in 34 provinces. Additionally, this approach provides an overview of changes in investment patterns and policies during and after the pandemic (Hordofa, 2023).

Parameter sign for government expenditure in the short term is positive, and p-value is less than α (5% = 0.05), indicating a significant positive effect on economic growth. Short-term effect of government expenditure is 9.128367, suggesting that 1% increase in government expenditure will increase short-term economic growth by 9.12%. Long-term effect of government expenditure is 12.15907, indicating that 1% increase in government expenditure will increase long-term economic growth by 12.15%. This research is consistent with Keynesian theory, which argues that one component of aggregate expenditure, government expenditure affects economic growth. These studies also support the hypothesis that government spending positively influences economic growth. This is consistent with research conducted by (Soleh & Anitasari, 2015), which found that government spending variables positively influence economic growth. Government spending has a significant positive impact in both short and long terms, indicating that governments of the 34 provinces have effectively allocated regional budgets. Expenditures by local governments on projects such as infrastructure development and improvement, education, health, and transportation are expected to benefit communities through the development of these regions.

One way to stimulate economic growth is to increase aggregate spending, including government spending. Government spending such as goods expenditure and personnel expenditure can be a boost to economic growth. Therefore, government spending can contribute to economic growth in 34 provinces. A high level of economic growth in a region can attract capital investment from both the private and government sectors. With increased capital accumulation, it is expected to increase output and income in the future, which will ultimately contribute to better economic growth (Priyono et al., 2019).

With quality infrastructure in place, it is anticipated that efficiency and effectiveness will increase across various sectors, ultimately enhancing productivity and supporting economic growth. Several benefits of policies in mitigating the negative economic impacts during the pandemic prompted governments to develop strategies to manage these negative effects. Additionally, fiscal policy measures were implemented to minimize the adverse effects of the pandemic (Bonaccorsi et al., 2024).

CONCLUSION

Our research offers useful insights into the intricate landscape of energy disclosure in non-cyclical consumer-sector manufacturing companies. The worldwide increase in energy usage, which is caused by population growth, highlights the necessity for sustainable energy methods to guarantee long-term development and economic progress. Governmental laws, such as Government Regulation (PP) Number 33 of 2023, specifically target energy-saving programs to meet the urgent need for cost-effective and sufficient energy provision. Energy disclosure by corporate entities in Indonesia is an important indicator of corporate concern for the environment and support for sustainable development policies. The level of CSR disclosure and sustainability reporting in the energy sector in Indonesia is still low and needs to be improved, although some large companies have made progress. Transparent and comprehensive disclosure can strengthen stakeholder trust, support better environmental management, and accelerate the achievement of sustainable development goals in Indonesia (Fia et al., 2024; Oktapiani & Simatupang, 2024).

Economic growth serves as a measure of regional progress. This study reveals that household consumption significantly positive boosts economic growth in both the short and long terms. We found that domestic investment exhibits a positive but statistically insignificant impact on economic growth

in both the short and long term. In contrast, foreign investment exhibits a negative but also statistically insignificant impact on economic growth in both time periods. Government expenditure demonstrates a significant positive impact on economic growth over in both the short and long terms and the research (Asiyan, 2020) which states that investment has no significant effect due to fluctuations in domestic investment growth, it shows that the confidence of domestic investors to invest in several regions in Indonesia is still low. In addition, factors such as lack of infrastructure governance and good communication between entrepreneurs and the government also play a role. Adequate infrastructure, particularly in transportation can reduce distribution costs and improve economic efficiency. A less than optimal allocation of PMDN can affect economic growth.

Several factors explain why domestic and foreign investment variables deviate from the hypotheses and theoretical frameworks used. These findings suggest ongoing challenges in addressing long-term economic growth issues such as geopolitical conditions, infrastructure deficiencies, and lingering legal barriers that discourage substantial investment in Indonesia. Additionally, the Covid-19 pandemic viruses has introduced further complexities.

Effective policies are essential to attract both domestic and foreign investors to Indonesia, addressing infrastructure gaps and legal uncertainties prevailing in the country. Future research should delve deeper into the impact of household consumption, domestic and foreign investments, and government expenditure on economic growth. Including additional variables like exports and imports could strengthen the findings of such studies.

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