

Business Investment Opportunities for Community Welfare: Evidence from Indonesia

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Abstract

This research uses panel data covering 34 provinces for 13 periods from 2009 to 2021. Foreign direct investment has an important role not only in improving Indonesia's economic position compared to other countries but also as a driver for the sustainability of Indonesia's business and economy. The researchers analyse the extent to which gross domestic regional product (GDRP), domestic investment, the Gini coefficient, and literacy influence foreign direct investment (FDI) inflow into Indonesia. The authors choose the best model among various alternatives, namely, pool, fixed effects, and random effects regression with the Chow and Hausman test methods. Through the best model, namely, refined random effects, the authors prove that GDRP, regional domestic investment, regional Gini coefficient, and regional literacy influence the increase in Indonesia's FDI. This research contributes to the theoretical gap, practical knowledge gap, and empirical gap. The results of this research have a new insight that knowledge and skills, innovation, and a supportive economic situation are the keys to successful business investment movements.

Key words

foreign direct investment, gross domestic regional product, domestic investment, Gini coefficient, literacy.

Cite as:

Budiono, S., & Purba, J.T., (2024). Business Investment Opportunities for Community Welfare: Evidence from Indonesia. *Forum Scientiae Oeconomia*, 12(3), 114-137. https://doi.org/10.23762/FSO_VOL12_NO3_6

Received: 4 June 2023

Revised: 28 August 2024

Accepted: 7 September 2024



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Introduction

In conducting international business, multinational companies refer to three objectives, namely, gaining market share, obtaining economic resources abroad, and gaining efficiency with relatively low production factor costs abroad (Moon, 2015). Indonesia has made changes to investment regulations and human resource reforms. This cannot be separated from the country of Indonesia, which has three potential multinational corporation goals (Jensen, 2008; Lekovic, 2018).

Investors' interest is due to a country's purchasing power, which is reflected in the gross domestic product. The GDP is an economic quantity that is reflected in economic activities among households, businesses, the government, and the rest of the world. Therefore, GDP not only measures a country's performance but also acts as a benchmark for purchasing power in the local market (Egerer et al., 2016; OECD, 2015). As such, Indonesia's GDP as purchasing power for MNCs has implications for

increasing market share and reducing risk because the market is divided into two parts, namely, domestic and overseas. Indonesia's role in ASEAN countries is highly regarded in the international market because of its ever-increasing GDP, vast territory, population diversity, and natural resources. Table 1 compares Indonesia's GDP in 2022 with that of several ASEAN countries (Analytica, 2015; Magazzino et al., 2021; Ng & Kee, 2017).

Table 1. Gross Domestic Products of 10 ASEAN Countries.

No	Country	Population in millions	GDP Nominal millions USD	GDP Nominal per capita USD
1	Indonesia	274.859	1,318,807	4,798
2	Thailand	70.078	536,160	7,650
3	Singapore	5.637	466,789	82,807
4	Malaysia	32.993	407,923	12,364
5	Vietnam	99.462	406,452	4,086
6	Philippines	111.57	404,261	3,623
7	Myanmar	53.886	56,757	1,053
8	Cambodia	16.767	29,912	1,784
9	Brunei	0.442	16,639	37,667
10	Laos	7.477	15,304	2,046
	ASEAN	672.397	3,657,636	5,439

Source: World Bank, 2023.

In terms of the population in the ASEAN region, Indonesia is in first place, with 40% of the entire population of ASEAN countries being Indonesian residents. Furthermore, in terms of per capita income, Indonesia ranks fifth after Singapore, Brunei, Malaysia, and Thailand (World Bank, 2023). Thus, Indonesia has the potential for large and evenly distributed purchasing power for each of its residents (Ishikawa, 2021; Shimizu, 2021). The trend towards Indonesia's purchasing power is a basic need for its population, so this is what makes the Indonesian region potentially the most lucrative market in Southeast Asia (Cole et al., 2017; Lipsey & Sjöholm, 2011; Smeeding, 2005).

The GDRP, which is spread across 34 provinces throughout Indonesia, presenting conundrum with various resources and economic activities. Several provinces with incomes of more than 1 trillion rupiah are concentrated on the island of Java, which is dominated by four provinces, namely, the Special Regions of Jakarta, East Java, West Java, and Central Java, accounting for 54% of Indonesia's GDP (Badan et al., 2023). Regional market behaviour is very interesting regardless of the visible and invisible differences in the GDRP structure (Garnier & Madlener, 2016; Mawutor et al., 2023).

If we look at the GDP structure, gross domestic physical capital formation will contribute 30% of Indonesia's GDP in 2022 after the COVID-19 pandemic (Badan Pusat Statistik, 2023). The share of gross domestic physical capital formation from total GDP is quite large from the economy in producing goods and services; approximately 30% of GDP is physical capital, while human capital has not been considered. Therefore, economic investment activities could be more significant than expected if human investment could be calculated with certainty. Therefore, lower investment risks encourage business groups to increase investment in the hope that people's purchasing power situation will continuously improve (Hoag & Hoag, 2002; Wanger & Ar, 2022; Wei, 2013). The discovery of new natural resources will also encourage domestic and foreign investment in areas with abundant economic resources.

The reason is that purchasing power, abundant economic resources, and business efficiency due to the cost of local production factors that will be used are the main international business objectives of every multinational corporation (MNC) entering Indonesia. Moreover, the goal of gaining market share is a derivative goal because every product produced is considered to have a comparative advantage. The following is the development of FDI flowing into Indonesia in the last decade, as shown in Figure 1.

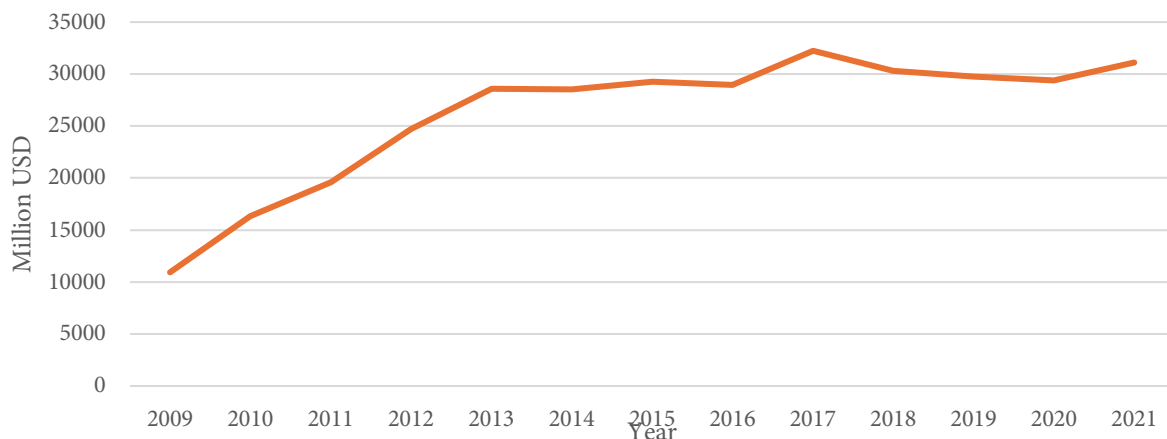


Figure 1. Foreign Direct Investment Inflow to Indonesia.

Source: BPS Indonesia, 2023.

FDI in each province is always increasing and is accompanied by an increase in people's income, which reflects increasing purchasing power. As a result, the overall income of citizens may improve, contributing to increased purchasing power. The end of 2021 was the time when the COVID-19 pandemic began, and Indonesia's economic enthusiasm began to rebound. Likewise, economic resources that were previously unmanaged can then be managed wisely (Trushkina, 2019).

There are five provinces in Indonesia that are the leading destinations for FDI. In 2022, foreign investment reached IDR 1,207.2 trillion or exceeded the target set by the Indonesian Government, namely, IDR 1,200 trillion. Moreover, West Java is one level below Central Sulawesi, with realized foreign investment or foreign direct investment of US\$ 6.5 billion. This achievement was followed by North Maluku, which reached an investment value of US\$ 4.5 billion (BKPM, 2023). The overall purchasing power of society towards needs is increasing, thus becoming the Indonesian domestic market, which is very attractive for producers. The increasing income in all provinces in Indonesia is accompanied by the government, which has built toll roads and sea toll infrastructure that support the increasingly smooth distribution of goods (Avci & Akin, 2020; Desai et al., 2004, 2005; Mead, 2020). The development of domestic investment from 2009-2022 is shown in Figure 2.

The size of domestic investment reflects the degree to which the risk will be spread throughout Indonesia. There is a trend towards domestic investment, which is constantly increasing, which shows that there is increasing purchasing power originating from domestic and the rest of the world (exports) and expectations for an increasingly better business world in Indonesia (Alibekova et al., 2023). The development of domestic investment from 2009-2022 is shown in Figure 2.

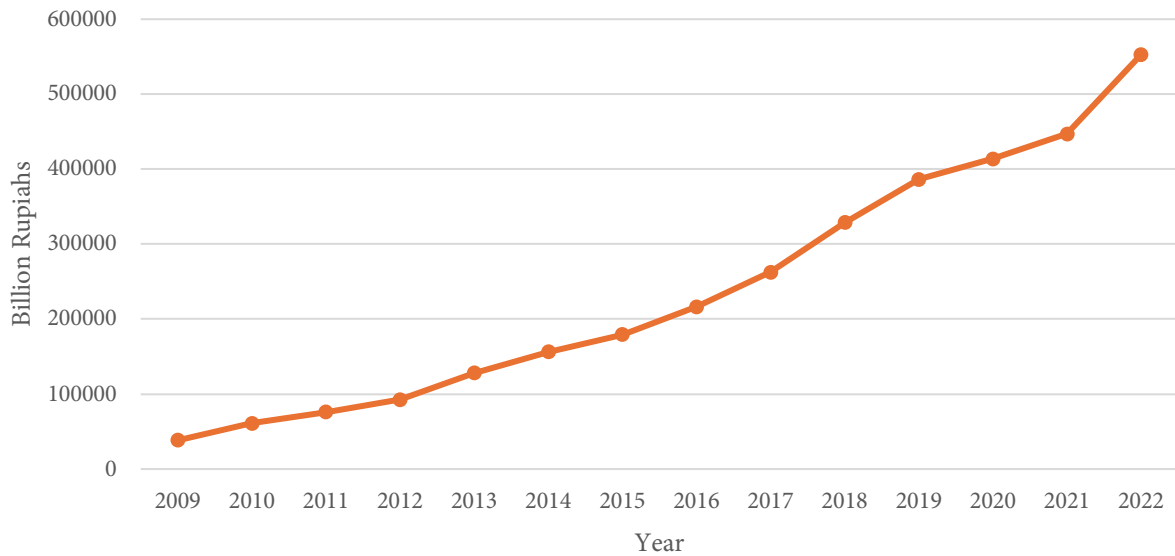


Figure 2. Domestic Investment in Indonesia.

Source: BPS Indonesia, 2023.

Conditions of income equality also encourage the formation of a purchasing power structure for goods/commodities that are close to normal needs. The more equal people's incomes are, the more even the demand will be for products based on people's needs. Over the last 10 years, the Indonesian Gini coefficient has decreased from approximately 40% to approximately 37%, as shown in Figure 3.

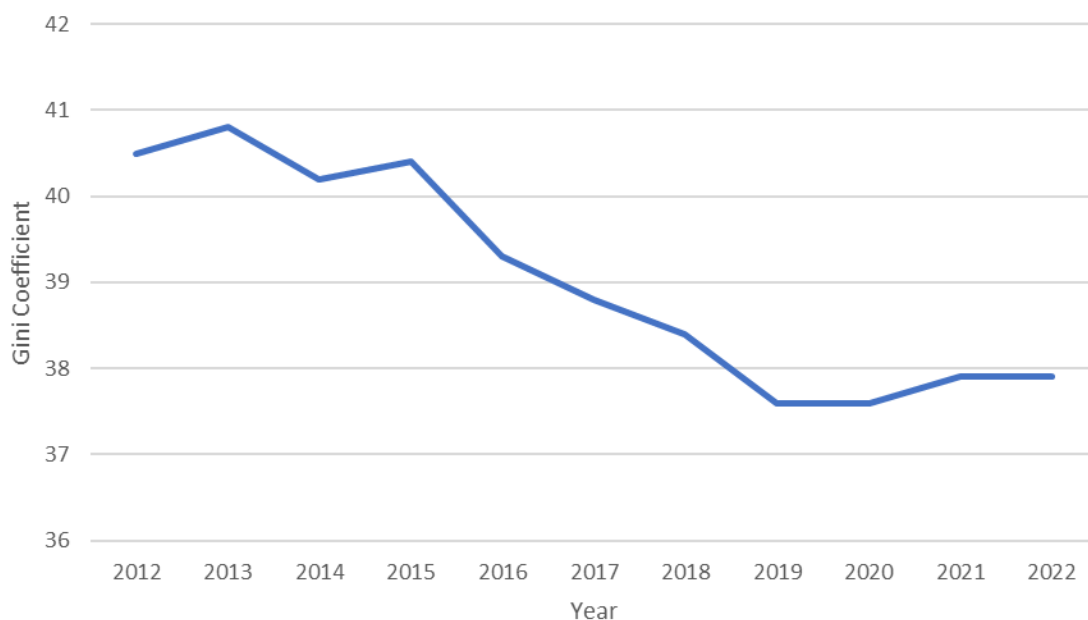


Figure 3. Indonesian Gini coefficient.

Source: World Bank, 2023.

As shown in Figure 3, the Indonesian government is working hard to reduce the Gini coefficient, even though a Gini coefficient above 30% is not ideal. On the basis of the World Bank's measure of

inequality, the distribution of national expenditures in the bottom 40% is 18.24%. According to the regional classification, the percentages of national expenditures in the bottom 40% of urban and rural areas are 17.19% and 21.06%, respectively. The recommendation to promote economic growth to reduce inequality is crucial. In rural areas, where inequality has historically been more pronounced, the positive trend toward improvement is encouraging. This progress signifies that efforts to uplift rural communities are yielding results. However, a sustained focus on equitable policies and targeted interventions remains essential to ensure continued advancement.

In 2022, the average inflation rate in Indonesia was approximately 4.21 percent greater than that in the previous year (Caballero, 2013). The fiscal budget indeed plays a crucial role in shaping inflation. To reduce inflationary fluctuations through energy subsidy mechanisms and spending allocations to stabilize food prices. To reduce inflationary fluctuations through energy subsidy mechanisms and spending allocations to stabilize food prices.

Literacy is the gateway to human capital development for all countries, including Indonesia. Human capital encompasses the collective intellectual and physical attributes of individuals. It includes their knowledge, skills, creativity, health, and abilities. This valuable resource makes a substantial contribution to economic expansion, innovation, and the advancement of society as a whole Nguyen (2023). The Indonesian government has encouraged literacy programs in all regions, including remote areas (Budiono et al., 2021). Every literate person will automatically learn greater knowledge, from not being able to read at all to being literate and then being able to count and carry out creativity/innovation in their environment (Mankiw et al., 1992; Musibau et al., 2019). This situation has led to a jump in the progress of human capital in Indonesia.

Literacy has also created a mindset in which people care about a better future. Indonesian people are increasingly encouraged to pursue higher formal education. Likewise, they will be easier to mold into loyal and dedicated workers than those the government's literacy program has not touched. They will also be more innovative in terms of production processes and innovative products (Allen, 2003; Budiono et al., 2021). In this way, such workers can care about the environment, the place of work, and the future (Blunch & Pörtner, 2011; World Literacy Foundation (WLF), 2015).

There are several previous research results regarding foreign direct investment (Sijabat 2022; 2023; Belloumi & Alshehry 2018; Nguyen 2022; Meyer & Habanabakize 2018; Kobilov & Kurbonov 2021; Choong & Lam 2010; Bekana 2016; Suliman & Mollick 2009; Paolino 2009; Naude & Krugell 2007). This research highlights the fascinating interplay between GDP, FDI, and domestic investment. These economic factors are intricately connected, and their relationships can significantly impact a nation's growth and development. Furthermore, the literacy variable positively influences FDI, and vice versa. Finally, several research results prove that FDI affects the Gini coefficient negatively and significantly, but the Gini coefficient does not affect FDI. However, the authors still include the Gini coefficient as an independent variable influencing FDI inflow to Indonesia.

Thus, the authors consider independent variables that are thought to affect FDI inflow, namely, the GDRP, domestic investment, the Gini coefficient, and literacy. Therefore, we analyse 4 independent variables and 1 dependent variable. After all, FDI is needed for Indonesia's economic progress. We also care about the domestic and production factor markets in Indonesia. This research was conducted with the following structure: problem background, literature review, methodology and data, analysis and discussion, conclusion, suggestions, and limitations.

1. Literature review

In her empirical study, Sijabat (2022) examined the complex relationships between foreign direct investment, foreign portfolio investment, and gross domestic product in ten ASEAN member nations between 2009 and 2021. These two economic factors are linked, with FDI greatly influencing a nation's economic output. Specifically, GDP influences FDI: A robust GDP can attract foreign investors due to the potential for higher returns and market growth. FDI influencing GDP: Foreign direct investment can contribute to economic growth by injecting capital, technology, and expertise into the host country.

Belloumi and Alshehry (2018) explore the complex connections between domestic capital investment, foreign direct investment, and economic growth in Saudi Arabia from 1970-2015. The findings are based on your methods: Autoregressive Distributed Lag Bounds Testing: The ARDL approach examines the long-term relationship between variables. The fully modified ordinary least squares technique is a method for estimating long-run relationships. Because it incorporates both endogeneity and serial correlation, it is appropriate for analysing the factors that influence economic growth. It addresses the issue of endogeneity by incorporating lagged variables. Canonical cointegrating regression is used to explore the cointegrating relationships between variables.

The results show intriguing relationships between economic factors, particularly the relationship between FDI and nonoil GDP growth, which is a subject of considerable debate and study in economic dynamics. Understanding these dynamics is crucial for informed policy decisions and sustainable development. The findings indicate that fluctuations in nonoil GDP influence FDI, and vice versa. The negative bidirectional causality between the growth of nonoil GDP and domestic capital investment suggests that changes in one variable affect the other, and vice versa. Fluctuations in nonoil GDP impact domestic capital investment, and vice versa, over time, indicating a negative bidirectional causality between nonoil GDP growth and FDI, as well as between nonoil GDP growth and domestic capital investment. Consequently, it can be inferred that FDI and domestic capital investment are interconnected and exert mutual influence on each other in the long run (Majerová & Pražák, 2020).

Nguyen (2022) examines the impact of GDP on FDI inflows over a period of two decades. Nguyen's study focuses on South Asia. Higher GDP growth typically attracts greater FDI due to the availability of investment prospects and potential profits in an expanding economy. Nguyen conducts the unit root test and the lag length and estimates the VAR Model. Additionally, Nguyen tests Granger causality, examines the stability of eigenvalues, and conducts the Johansen test for cointegration.

Meyer and Habanabakize (2018) used the ARDL model to estimate political risk, GDP, and trade openness to collectively shape FDI decisions. The study suggests that countries should work to improve their political risk ratings through existing political and economic unions and embed their natural resource exploitation within a sound institutional framework. South Africa's experience provides valuable insights for other countries seeking to attract foreign investment. Therefore, addressing political risk and promoting policies that attract and retain foreign investment are essential steps toward achieving sustainable economic growth and improving the well-being of citizens in South Africa.

Kobilov and Kurbonov (2021) discovered a positive significant bidirectional relationship between GDP and FDI. More precisely, there is a causal relationship between GDP and FDI, with GDP Granger causing changes in FDI. Additionally, fluctuations in FDI were explained by shocks in GDP,

with GDP accounting for 55.0 percent of the variance in FDI. When choosing the lag length for a VAR (vector autoregressive) model, it is essential to use a parsimonious approach. Parsimony seeks to achieve a balance between the intricacy of a model and its ability to provide clear explanations. The Johansen test is employed to determine the presence of a long-term relationship (cointegration) among various time series variables. Granger causality is a statistical notion that relies on the ability to forecast. It examines the correlation between cause and effect. The VAR model is designed to reflect the interdependencies that exist among different time series variables. The ECM is employed in cases where variables exhibit cointegration. The ECM includes an error correction term that adjusts for deviations from the long-run equilibrium.

A study conducted by Kobilov and Kurbonov (2021) emphasized the significant impact of GDP on FDI inflow in Uzbekistan. When a country experiences robust economic growth (reflected in a high GDP), it tends to attract more FDI. Conversely, FDI contributes to economic growth. Foreign investors contribute capital to local ventures, which leads to the stimulation of economic activities. Policymakers acknowledge the importance of FDI as a catalyst for promoting economic development in Uzbekistan. The findings that domestic investment exerts a more substantial influence on economic growth than FDI does are intriguing. Domestic investment (made by local businesses and individuals) is indeed vital for sustainable growth. It directly fuels economic activities within the country. FDI, while essential, may not always have an immediate effect on local employment or technology diffusion. However, it brings external expertise, access to global markets, and capital infusion. A striking balance between domestic investment and FDI is crucial for holistic economic progress (Meyer, 2021).

Choong and Lam (2010) examine the factors influencing FDI in Malaysia over 37 years, from 1970-2006. Gross FDI inflow is an essential indicator of economic openness and attractiveness to foreign investors. The literacy rate is a measure used to approximate a nation's level of human capital development and education. The trade-to-GDP ratio reflects the relative importance of international trade in a country's economy by dividing the total value of imports and exports by GDP. A comprehensive study investigated the FDI dynamics between Malaysia and the other five ASEAN countries via the multivariate GARCH model. The relationship between FDI inflows and economic growth in host countries is heavily debated. While some studies show a positive impact of FDI on economic growth, others reveal contrasting results. Policymakers view FDI as crucial for development, but other factors, such as human capital and financial depth, also play vital roles (Karaçor et al., 2018). Educational institutions play a pivotal role in producing highly educated communities. Investment in education and opportunities for higher education expansion have become central to economic development agendas in many countries, including Malaysia. Human capital, particularly at the higher education level, generates economic growth by meeting the demands of a technologically advancing labor market. With the Granger causality test, the study revealed that the size of the host market is the most robust determinant of FDI inflow.

Bekana (2016) examined the determinants of FDI inflow to the Ethiopian economy from 1991-2013 in detail. The research focused on both the long-run and short-run forces behind FDI. Factors such as sustained GDP growth, a skilled workforce, high-quality infrastructure, stable economic conditions, and a robust export sector attract FDI. Bekana employed methods such as the ECM formulation, ADF test, and Engel Granger procedure (Bekana, 2016). The implications include policies that encourage innovation, entrepreneurship, and investment in infrastructure that can drive

economic expansion. Investment-friendly tax policies and streamlined regulations also play crucial roles. Stable macroeconomic conditions are attractive to investors. Policymakers should maintain low inflation rates, stable exchange rates, and prudent fiscal policies. A predictable economic environment reduces risks for investors. A skilled workforce is critical for attracting FDI. Policies that invest in education, vocational training, and research and development enhance human capital. Collaboration between educational institutions and industries can bridge skill gaps. Additionally, infrastructure development is vital. Transportation, energy, telecommunications, and logistics investments improve connectivity and reduce business costs.

Suliman and Mollick (2009) find that financial development and trade openness have positive effects on FDI in a region. On the other hand, corruption hurts FDI. Political stability, government effectiveness, and the rule of law significantly attract FDI. They used a fixed effect method, the cross-sectional weights technique (CSW), and seemingly unrelated regression (SUR) weighted least squares. The literacy rate, which reflects essential reading and writing skills, influences FDI inflows. The impact of political and civil rights on FDI inflows varies based on context. There is also a relationship between war incidents and FDI inflows (Suliman & Mollick, 2009).

Additionally, Paolino (2009) examined the relationships among FDI, domestic investment, human development, and economic growth in China. Human development, particularly the literacy rate, significantly influences FDI inflow. The OLS method was used for estimation, covering the analysis period 1977-2007. In summary, the literacy rate serves as a crucial factor of human development and significantly influences FDI in China.

The Arellano–Bond estimator is a generalized method of moments (GMM) estimator introduced by Arellano and Bond (1991) and is a robust econometric methodology used to estimate parameters in dynamic panel data models. Naude and Krugell (2007) employed this methodology in their investigation. The panel data utilized encompass all African countries and span a 20-year period from 1970-1990. Naude and Krugell conducted a study on many factors that influence foreign direct investment (FDI) via the generalized method of moments (GMM) approach. The determinants they considered were government consumption, domestic investment, the inflation rate, political stability, the rule of law, accountability, regulatory load, and literacy rates in Africa.

Although geography itself may not directly determine the attraction of FDI to Africa, other factors, such as location and the institutional environment, play pivotal roles in this process. A new analytical categorization has been established to study the factors that influence the flow of foreign direct investment (FDI) into African nations. This classification system organizes countries according to their economic and institutional characteristics, considering the heterogeneity between them. Effective policies are essential for ensuring proper corporate governance, risk management, and compliance (Michalek, 2023). Political stability is a vital factor influencing FDI. Policymakers must acknowledge the importance of promoting political stability and effective governance to attract long-term FDI.

The Gini coefficient variable is a unique variable. Prior research has demonstrated that FDI inflow has a significant effect on the Gini coefficient. Research results by Ucal et al. (2016), Reezk et al. (2022), Manu (2021), Cho and Ramirez (2016), Vezentan and Neagu (2022), Couto (2018), Harun et al. (2008), and Muntaka et al. (2023) have provided evidence that FDI affects the GINI coefficient rather than the other way around. These findings suggest that the entry of FDI will change the income distribution in the host countries of foreign investment. However, this research aims to challenge this

prevailing notion by exploring the possibility that the GINI coefficient influences a country's FDI inflow. There is currently no standard theory supporting this claim, and consequently, very few studies address this relationship.

The rationale that the Gini coefficient influences FDI inflow lies in the fact that a higher Gini coefficient value signifies a wider wealth gap between the rich and the poor in Indonesia. While this phenomenon is prevalent in many countries, it is particularly pronounced in developing nations where the impoverished population outweighs the affluent minority. This large demographic, which seeks means to improve quality of life, is a desirable workforce that foreign companies are actively pursuing (Daniels, Radebaugh, & Sullivan, 2015).

The relationship between FDI inflow and various economic factors is a topic of significant interest. They are tested by assessing the following hypothesis as follows.

Hypothesis 1: The GDRP positively influences FDI inflow in Indonesia.

Hypothesis 2: Domestic investment positively affects FDI inflow in Indonesia.

Hypothesis 3: The Gini coefficient has an effect on FDI inflow in Indonesia.

Hypothesis 4: Literacy positively influences FDI inflow in Indonesia.

2. Methodology

Because Indonesia consists of many provinces, thousands of islands separated by oceans, different cultures, different religions, and different political views, researchers use panel data so that the analysis results are powerful in terms of benefits and as few limitations as possible (Baltagi, 2021). The researchers obtained secondary data from official institutions from the Central Statistics Agency of the Republic of Indonesia. The data used in this analysis are panel data covering 34 provinces in Indonesia during the 2009-2021 period. The authors used STATA Software (Belotti et al., 2017). The results of the analysis are expected to be comprehensive, detailed, and thorough.

In this research, which uses static panels, fulfilling the classical assumption is mandatory and important because if the classical assumption is not fulfilled, it will cause serious econometric problems. Thus, the analysis results from this research yielded the best linear unbiased estimation (BLUE).

This study incorporates several independent variables. This correlation is a problem because independent variables should exhibit independence. Therefore, the concept of Variance Inflation Factors and their relationship with the R-squared in regression models Equation 1.

$$VIF_i = \frac{1}{(1-R_i^2)} \quad (1)$$

where R_i – multiple correlation coefficient between X_i and the remaining independent variables (p-1). $i = 1, \dots, p$ (independent variables).

When $R_i^2 = 0$, there is a complete absence of multicollinearity in the regression model. In other words, there is no linear relationship between the independent variables (predictors). Each predictor contributes independently to explaining the variation in the dependent variable. However, if $R_i^2 = 1$, it signifies exact multicollinearity. This situation occurs when one or more independent variables are perfectly linearly related to each other. As a result, the regression coefficients become indeterminate, and the model cannot be estimated accurately.

A stationary test is an essential prerequisite for conducting research via the regression method. Levin–Lin–Chu considered the collection of cross-sectional time series data to examine the unit root concept. As the size of the cross-sectional dimension and the time series dimension of the panel data increases, the pooled t-statistic values display specific characteristics. As the dimensions of panel data expand, researchers must consider both parameter heterogeneity and cross-sectional dependency to generate precise estimates and significant insights from their models. (Choi, 2001; Im et al., 2003; Levin et al., 2002). A unit root refers to a stochastic tendency that exists inside a time series. In other words, the series does not return to a consistent average value over time. More precisely, a process can be represented as a sequence of monomials, which are expressions consisting of a single term. As the authors explain in Equation 2:

$$y_{i,t} = \alpha_i + \gamma_i y_{i,t-1} + u_{i,t} \quad (2)$$

Equation (2) can be rewritten as Equation (3):

$$\Delta y_{i,t} = \alpha_i + \pi_i y_{i,t-1} + u_{i,t} \quad (3)$$

A stationary time series has a constant mean and constant variance over time, $H_0: \pi_i = 0$, for all i . The alternative hypothesis suggests that the data are stationary, $H_a: \pi_i \neq 0$, for each i .

On the basis of the literature review and gap research mentioned above, the authors built a research model. The authors suspect that the independent variables GDRP, domestic investment, the Gini coefficient and literacy influence FDI flows to Indonesia. Because this analysis must meet the classic assumption of normality, there are 2 variables that must be naturalized, namely, FDI and domestic investment into $\ln(\text{FDI})$ and $\ln(\text{DI})$. Therefore, all independent variables together are thought to influence FDI flows throughout Indonesia during the period from 2009-2021.

The authors decided to use the Dumitrescu–Hurlin test to test the causal relationship because this technique is more econometrically efficient. Each independent variable and a dependent variable are tested for the extent of cause and effect econometrically (Dumitrescu & Hurlin, 2012). The Granger causality test was developed by Dumitrescu-Hurlin (2012) to test the direction of the causal relationship. This research discusses two stationary variables, x and y , which were observed in 34 provinces over a span of 13 years. For every province, $i = 1, 2, 3, \dots, 34$, and for every year, $t = 2009, \dots, 2021$. Equation (4) is a linear model of mathematical causal relationships:

$$y_{it} = \alpha_i + \sum_{k=1}^K \gamma_i^{(k)} y_{i,t-k} + \sum_{k=1}^K \beta_i^{(k)} x_{i,t-k} + \varepsilon_{i,t} \quad (4)$$

with $K \in \mathbb{N}^+$ and $\beta_i = (\beta_i^1, \dots, \beta_i^K)'$.

The authors simplify the formula, and the individual effect α_i should be defined in the time dimension. The first conditions $(y_{i,-k}, \dots, y_{i,0})$ and $(x_{i,-k}, \dots, x_{i,0})$ are observed in this study. In panel data analysis, the assumption that the lag order K is the same for all cross-sectional units within the panel dataset is a common simplification. This assumption implies that the time lags considered in the model are consistent across all individual units in the panel. The parameters $\gamma_i^{(k)}$ and $\beta_i^{(k)}$ play crucial

roles in our model. It is possible to mathematically represent this model with constant coefficients and individual effects.

In the heterogeneous panel data model, the standardized average statistic $\tilde{Z}_N^{Hnc}$ converges in distribution for $T = 12$ fixed dimensions with $12 > 5 + 2K$, on the basis of the assumed noncausality test. As shown by Equation (5) below, this study employs a maximum lag of up to 2.

$$\tilde{Z}_N^{Hnc} = \sqrt{\frac{N}{2 \times K} \times \frac{(T-2K-5)}{(T-K-3)}} \times \left[\frac{(T-2K-3)}{(T-2K-1)} W_{N,T}^{Hnc} - K \right] \xrightarrow{N \rightarrow \infty} N(0,1) \quad (5)$$

with $\tilde{W}_{N,T}^{Hnc} = (1/N) \sum_{i=1}^N W_{i,T}$.

The Wald test, a statistical method used for hypothesis testing in the context of maximum likelihood estimation, $W_{i,T}$ with the hypothesis $H_0: \beta_i = 0$ and $\beta_i \in R.K$. Therefore, the D-H test can be carried out in the reverse direction between variables, namely, variable y affects variable x . In statistical analysis, establishing whether there is a two-way link between variables sometimes requires evaluating their correlations.

These econometric models for static panels include the pooled regression model, fixed effects model and random effects. The following are the equations and explanations of the 3 types of approaches to static panels. The authors must choose the best model among various alternative models.

If z_i is a constant number member, OLS provides consistent and efficient estimates of the regression coefficients when these assumptions hold. The general α and slope vector β are shown in Equation (6).

$$\ln(FDI)_{it} = GDRP'_{it}\beta_1 + \ln(DI)'_{it}\beta_2 + GINICcoef'_{it}\beta_3 + Literacy'_{it}\beta_4 + z'_i\alpha + \varepsilon_{it} \quad (6)$$

This model does not account for "provincial" cross sections or time series. In other words, the OLS method is used to process all the entered data. Thus, the OLS method is imperfect because econometric problems arise. z_i is not observed, but it is related to $GDRP'_{it}$, $\ln(DI)'_{it}$, $GINICcoef'_{it}$, and $Literacy'_{it}$. The pooled OLS model applies ordinary least squares (OLS) methodology to analyse panel data. This model operates under the assumption that there are no unobservable effects particular to each object. This assumption might not always hold true, especially when dealing with panel data. Even though the pooled regression method has been declared fit and appropriate, it is necessary to compare pooled regression and fixed effects through the Chow test. The fixed effect model is shown in Equation 7:

$$\ln(FDI)_{it} = GDRP'_{it}\beta_1 + \ln(DI)'_{it}\beta_2 + GINICcoef'_{it}\beta_3 + Literacy'_{it}\beta_4 + \alpha_i + \varepsilon_{it} \quad (7)$$

where $\alpha_i = z'_i\alpha$ represents all the observable effects and is used to specify the conditional mean.

The use of fixed effects is a powerful technique to account for unobserved heterogeneity across different groups or entities. Authors encounter multivariate survival time data, where failure times exhibit correlations even in the presence of model covariates. This phenomenon arises from unobserved heterogeneity, which clusters observations on the basis of latent factors not explicitly captured by the model.

In accordance with the previous description, the authors used the Chow test. The Chow test method considers the p value results in the F test in the output of the data process from the fixed effects method. The decision to select a model will be made if the F test probability value is smaller than the tolerance of 5%, then fixed effects will be chosen rather than pooled regression, and if the F test probability value is greater than 5%, then pooled regression will be chosen.

Through the calculation results of the Hausman test, the authors choose the random effects approach, so the following is the econometric equation. This model assumes that the absence of individual heterogeneity is not present and that there is a lack of correlation between variable z_i and the included variables. The model is shown in Equation 8:

$$\ln(FDI)_{it} = GDRP'_{it}\beta_1 + \ln(DI)_{it}'\beta_2 + GINICoeff'_{it}\beta_3 + Literacy'_{it}\beta_4 + \alpha + u_i + \varepsilon_{it} \quad (8)$$

Linear regression is a statistical method employed to establish a mathematical model that describes the relationship between a dependent variable and one or more independent variables. Random effects play a crucial role in hierarchical models, adding realism to our descriptions of complex systems. It specifies that u_i belongs to a group of provinces and combines random elements. The unobserved factors specific to each province that do not exhibit any correlation with the independent variables in the regression model are the GDRP, domestic investment, Gini coefficients and literacy.

The Hausman test is essential for choosing the most appropriate model, either with fixed effects or a random effect, for panel data analysis. The authors made decisions by considering the chi-square probability tolerance value. The Hausman test involves a chi-square (χ^2) comparison of all coefficients between the fixed effects technique and the random effects approach. If the chi-square (χ^2) probability value is below a threshold of 5%, the null hypothesis is statistically supported. In such cases, authors opt for fixed effects and vice versa.

3. Research results

The research utilizes the following data and variables. There are four independent variables, the GDRP, domestic investment, the Gini coefficient, and literacy, while the dependent variable is FDI inflow to Indonesia. Table 2 presents the description of each variable.

Table 2. Statistical Descriptive Statistics.

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
Ln(FDI)	442	5.33	1.93	0	9
GDRP	442	265,628.20	380,676.20	1347	1856301
Ln(DI)	442	7.20	2.32	0	11
GINICoef	442	0.36	0.04	0.25	0.43
Literacy	442	95.03	5.41	64	100

Source: Data Processing, 2023.

There are 2 variables that must be log naturalized as required by the classic regression assumption that the data must be normal, which means that the data variations take the form of a normal curve. The variables that are logarithmic are FDI and domestic investment. Moreover, the GDRP, the Gini coefficient and literacy are normal, so the data no longer need to be logarithmically transformed. On the basis of Table 2, all variables that meet classical assumptions have average, standard deviation, minimum and maximum variations. Moreover, the relationships among the variables utilized in the study are displayed in Table 3 below.

Table 3. Correlation Matrix.

Variable	Ln(FDI)	GDRP	Ln(DI)	GINICoef	Literacy
Ln(FDI)	1.0000				
GDRP	0.3844*	1.0000			
Ln(DI)	0.4714*	0.5656*	1.0000		
GINICoef.	0.2084*	0.2384*	0.0392	1.0000	
Literacy	0.1869*	0.1022	0.2047*	-0.2982*	1.0000

Note: * indicates statistical significance at the 5% level.

Source: Data Processing, 2023.

According to the variables utilized in the analysis, there is no significant association between the independent variables since their correlation value is less than 0.6. Therefore, the data pertaining to the variables employed are appropriate for regression analysis.

Because this study uses panel data, the provisions for panel data do not have to be met as strictly as classical assumptions are. The authors tested the classical assumptions needed, namely, the multicollinearity test and the stationary test. In the multicollinearity test, the authors used the variance inflation factor (VIF), whereas the Levin–Lin–Chu test used the stationarity test. The results of the multicollinearity test of all the independent variables are listed in Table 4 below.

Table 4. Multicollinearity Test.

Variable	Variance Inflation Factor (VIF)	1/VIF
GDRP	1.59	0.63
Ln(DI)	1.53	0.66
GINICoef	1.20	0.83
Literacy	1.16	0.86
Mean VIF	1.37	

Source: Data Processing, 2023.

The VIF values of all the independent variables are less than 10, so there is no significant correlation between the independent variables. Initially, this method was developed by Quah (1992,1994) and Levin dan Lin (1993). This method is intended for homogeneous panels. In addition, it is used for conditions where there are specific individual effects or heterogeneity between groups. where the conditions require that N/T approaches zero and that both N (cross section) and T (time series) go to infinity. However, this method has weaknesses such as being unable to accommodate heterogeneity between groups. This heterogeneity includes the unique influence of individuals (individual special effects) and different patterns of residual serial correlations.

Table 5. Levin–Lin–Chu Unit Root for the GDRP, Ln(DI), GINICoef, Literacy and Ln(FDI).

Panels : 34 Periods: 13	Unadjusted t	Adjusted t*	p value	H ₀ : Panels contain unit roots. H _a : Panels are Stationary.
GDRP	-6.8836	-6.2192	0.0000	Reject H ₀ , Accept H _a
Ln(DI)	-11.2421	-7.4487	0.0000	Reject H ₀ , Accept H _a
GINICoef	-13.3444	-4.1080	0.0000	Reject H ₀ , Accept H _a
Literacy	-11.4809	-5.9366	0.0000	Reject H ₀ , Accept H _a
Ln(FDI)	-12.5149	-1.9982	0.0000	Reject H ₀ , Accept H _a

Source: Running Data, 2023.

From the explanation in Table 5, all the data tested via the Levin-Lin-Chu method did not obtain unit roots from the data to be analysed and were declared stationary. The probability value of the Levin-Lin-Chu test is less than 1%.

The authors employed the Dumitrescu–Hurlin test (2012) to establish the causal link between variables. The results of the causality test using the D-H test for all independent variables with a dependent variable, or vice versa, are presented in Table 6 below.

Table 6. Dumitrescu–Hurlin test.

Causality of Variables	W-Bar	Z-Bar	Z-Bar Tilde
GDRP $\rightarrow$ Ln(FDI)	2.2653	5.2171 (0.0000)	2.4836 (0.0100)
Ln(FDI) $\rightarrow$ GDRP	0.9449	-0.2271 (0.8204)	-0.8640 (0.3876)
Ln(DI) $\rightarrow$ Ln(FDI)	2.8398	7.5856 (0.0000)	3.9400 (0.0001)
Ln(FDI) $\rightarrow$ Ln(DI)	2.6366	6.7480 (0.0000)	3.4249 (0.0006)
GINICoef $\rightarrow$ Ln(FDI)	1.6719	2.7704 (0.0056)	0.9791 (0.3275)
Ln(FDI) $\rightarrow$ GINICoef	3.0269	8.3573 (0.0000)	4.4144 (0.0000)
Literacy $\rightarrow$ Ln(FDI)	0.9995	-0.0021 (0.9983)	-0.7257 (0.4681)
Ln(FDI) $\rightarrow$ Literacy	4.0347	12.5122 (0.0000)	6.9692 (0.0000)

Source: Data Processing, 2023.

The GDRP is the income received by the community, which shapes market purchasing power. Furthermore, in accordance with market mechanisms, people's purchasing power will cause market demand to shift outwards, meaning that the law of demand is violated. Increasing domestic market demand will invite foreign companies to enter the Indonesian domestic market. Thus, FDI inflow is a result of increasing the GDRP throughout Indonesia. The test results with the D-H test indicate that the Z-Bar and Z-Bar Tilde significance values are smaller than 5%, so it is concluded that the GDRP influences FDI significantly. The results of this research are supported by Nguyen (2022), Choong and Lam (2010), and Bekana (2016). Therefore, the expected hypothesis is that GDP affects FDI inflow positively and significantly.

FDI inflow to Indonesia is investment in Indonesia originating from abroad. The existence of FDI inflow will encourage a better investment climate. Incoming foreign investment will require local physical capital and domestic labor, which means that the demand for local capital and job opportunities increases so that people's income, in this case, the GDRP, increases. Therefore, rapid FDI inflow will encourage the GDRP throughout Indonesia. However, on the basis of the D-H test calculations for the panel data in this research, the Z-bar and Z-bar Tilde p values are statistically significant at >5% tolerance, so they are not statistically significant. This confirms that, causally, the GDRP affects only FDI inflow and not vice versa. The results of this test are not in line with the findings of Sijabat (2023) and Paolino (2009), who state that FDI and GDP have a bidirectional causal relationship.

Furthermore, domestic investment will encourage demand for goods and physical capital as well as opening new jobs due to the expansion of domestic companies so that people's income increases significantly. The expansion of domestic investment shows that investment activity in Indonesia in the business sector is "profitable and safe from risk", which is what directly encourages FDI inflow to Indonesia to increase. Then, increasing purchasing power will shift market demand, thereby attracting FDI inflow. Testing with the D-H test revealed that the p value of the Z-bar and Z-bar Tilde tests was statistically significant below 1% tolerance. The results of this study are in accordance with those of Naude & Krugell (2007).

Is there a causal relationship between DI and FDI? Furthermore, the authors believe that the heavy FDI inflow occurs because foreign investors consider that investment in Indonesia is safe and has low risk. Automatically, FDI opens employment opportunities, and the use of capital increases people's income and purchasing power for all goods and services on the market. Thus, the behavior of foreign entrepreneurs is followed by domestic entrepreneurs in investing to expand production. The DHPC analysis provides empirical evidence supporting the bidirectional relationship between FDI and domestic investment, emphasizing their pivotal roles in regional economic performance. This shows that there is mutual causality in domestic and foreign business activities by investors, meaning that a greater economic business situation will mutually encourage a friendly situation toward foreign investment; conversely, domestic investors will be encouraged by the greater condition of FDI inflow to Indonesia.

A higher Gini coefficient shows that people's income is becoming more unequal. On the other hand, the more equal people's income is, the lower the Gini coefficient value is, and the better the purchasing power structure is. This will invite FDI to Indonesia. The results of the D-H test calculations reveal that the significance value of the Z-Bar is lower than 5%, whereas the Z-Bar Tilde value is 0.978, which is not very good, and the probability value is less than 35%. The next test is to reverse the direction of the dependent variable FDI toward the independent variable Gini coefficient. FDI inflow to Indonesia will reduce the value of the Gini coefficient, meaning that the income of the poor will increase through expanding employment opportunities in foreign companies. Foreign entrepreneurs pay salaries to Indonesian workers on the basis of their economic value so that the Gini coefficient decreases.

Literacy is an indicator of human capital for domestic labor. Domestic workers want to change their fate through new jobs or increasing levels of old jobs from multinational companies. Foreign entrepreneurs themselves need skilled workers to operate machines and equipment in the increasingly complex multinational companies currently operating in Indonesia. Therefore, in this way, FDI flows rapidly into Indonesia. The increasingly rapid FDI inflow demands the ability of a skilled workforce to run multinational companies. Because the need for labor is such, workers are encouraged to increase their knowledge and skills. In this way, the literacy of workers and prospective workers must automatically increase. All Z-Bar and Z-Bar Tilde significance values are less than 5%.

The results of the Dumitrescu–Hurlin test indicate that the independent variables, namely, the GDRP, domestic investment, and the Gini coefficient, have a significant influence on FDI inflow to Indonesia. This is supported by the W-Bar value being greater than 1.6, suggesting a reasonable suspicion of the independent variables impacting the dependent variable. The only exception is the independent variable literacy, which has a W-Bar value of 0.9995. Foreign corporations employ Indonesian labor for practical reasons, therefore creating a need for improved literacy to facilitate the

presence of foreign enterprises in Indonesia. Thus, a highly literate workforce ensures the success of international corporations operating in Indonesia. Thus, it may be inferred that the majority of the independent variables have a statistically significant effect on the dependent variable, FDI inflow.

Data processing was carried out via the pooled method. All the data were significant, and the goodness-of-fit test was appropriate. However, to further validate the analysis, it was necessary to conduct the Chow test by comparing pooled regression with fixed effects regression. The F test leads to the conclusion that fixed effects regression is superior to pooled regression. Additionally, the Hausman test plays a crucial role in econometrics for guiding the choice between fixed effects and random effects models. Table 7 shows the Hausman test data processing.

Table 7. Hausman test results.

Variables	Coefficients		(b-B) difference	Sqrt(diag(V _b -V _B)) S.E.
	(b)FE	(B)RE		
GDRP	4.33e-07	7.29e-07	-2.95e-07	5.18e-07
Ln(DI)	0.17496	0.21050	-0.03554	0.01335
GINICoef	8.34364	9.11822	-0.77457	0.94449
Literacy	0.18283	0.12252	0.06031	0.02432
Chi2(3) = 7.40			Prob>chi2 = 0.0602	

Source: Running Data, 2023.

Table 6 shows the results of data processing via the Hausman method. The Chi2(3) value is 7.40, and the probability value of Chi2 = 0.0602 exceeds the tolerance of 5%, so it can be concluded that the random effects regression model is better than the fixed effects regression. Therefore, the random effects model is the best for analysis in this research. Furthermore, completing the regression via the latest random effects method means that the method has been refined, as shown in Table 8 below.

Table 8. Random Effects GLS Regression for Ln(FDI).

Cross Sectional Time-Series FGLS Regression					Conclusion
Coefficients: Generalized Least Squares		Number of obs: 442			
Panels: homoscedastic		Number of groups: 34			
Correlation: No Autocorrelation		Time Periods: 13			
Wald Chi2(4): 181.54		Probability>Chi2: 0.0000			
Ln(FDI)	Coefficient	Std. Error	z	P> z	
GDRP	5.44e-07	2.56e-07	2.13	0.033	Reject Ho
Ln(DI)	0.305872	0.041078	7.45	0.000	Reject Ho
GINICoef	10.71777	2.157477	4.97	0.000	Reject Ho
Literacy	0.059009	0.015400	3.83	0.000	Reject Ho
Constant	-6.478785	1.84507	-3.51	0.000	Reject Ho

Source: Processing Data, 2023.

The coefficient value of the independent variable parameter GINICoef is the largest, with a value of 10.72. This parameter's coefficient is the marginal effect component on FDI inflow. Moreover, the smallest parameter coefficient is the GDRP parameter coefficient, which is only 0.000000544. This means that the GDRP variable has a marginal effect on FDI, which seems statistically small from this research model. However, this coefficient is positive with respect to the hypothesis.

On the basis of Table 7, the model suitability test result with Wald Chi2(4) is 181.54, and the probability value is 0.0000, so the best model used is appropriate. Through partial testing of each variable with the Z test, they reject Ho. All the variables used with Z test probability values are below

the limit value of 5%, so it can be concluded that the independent variables GDRP, domestic investment, the Gini coefficient, and literacy significantly influence FDI inflow. Each variable can be described with a scenario on the basis of the findings from the data processing mentioned above. Two independent variables need to be discussed further, namely, the GDRP and domestic investment, because these two variables have similar behavior.

The coefficient α_2 represents the growth rate of FDI inflow to Indonesia in US dollars for every billion rupiahs. The GDRP parameter coefficient value is 0.000000544 and is positive according to the expected sign of the research hypothesis. The GDRP reflects the purchasing power of all demand for goods and services in each region. The GDRP parameter coefficient shows that an increase of 1 billion rupiahs will increase FDI inflow growth by 5.44×10^{-7} percent in million US dollars. Market demand increases because of the GDRP, so FDI inflow also increases. This situation creates a multiplier effect in the macroeconomy.

The three efficient $\alpha_{3,it}$ coefficients explain the elasticity of FDI due to the increase in domestic investment in each province in Indonesia. The elasticity coefficient (formula 9) indicates that a one percent increase in domestic investment in billion rupiahs will increase FDI inflow by 0.3 percent in million US dollars.

$$\alpha_{3it} = d\ln(FDI)/d\ln(DI) = \frac{\frac{\Delta FDI}{FDI}}{\frac{\Delta DI}{DI}} \quad (9)$$

The elasticity coefficient value for domestic investment in FDI is 0.3, which is in the range of 0-1, so it is included in the inelastic category. Therefore, a one percent increase in billions of rupiahs in domestic investment will increase FDI inflow by 0.3 percent in millions of US dollars throughout Indonesia. Because the elasticity value of FDI inflow is inelastic, investment policy will have difficulty increasing FDI inflow. The findings of this study are consistent with those of Paolino (2009), Sijabat (2023), Kobilov and Kurbonov (2021), and Naude and Krugell (2007).

Foreign and domestic investment in Indonesia from 2020 amounted to 826,3 trillion rupiahs; in 2021, it amounted to 901,0 trillion rupiahs; and in 2022, it amounted to 1,207,2 trillion rupiahs. This phenomenon shows sequential growth over 2 years, from 9.04% per year to 33.98% per year, despite the COVID-19 pandemic. Additionally, from January–June (Semester I) 2023, investment realization totaled 678.7 trillion rupiahs, representing a 16.1% increase over the same time in 2022. Consequently, 849,181 persons were absorbed into the workforce. This achievement reached 48.5% of the investment realization target in 2023, which was set at 1,400 trillion rupiahs. (BKPM, 2023).

Every increase in the Gini coefficient by one unit will cause an increase of 10.72% in FDI in millions of U.S. dollars. The more economic inequality that occurs in a country, the greater the degree to which foreign investment will increase. Even though an increase in the Gini coefficient will worsen the purchasing power structure of the Indonesian domestic market, FDI inflow to Indonesia is due to the availability of abundant and cheap economic resources. This situation of increasing inequality implies that the poor still have many people and are willing to pay low wages. In the last 2 years, there has been a jump in FDI inflow to areas with large natural resources (endowments), such as Sulawesi, Ambon, and Papua (eastern Indonesia). This happens because the multinational corporation wants to obtain economic resources at a low cost to achieve minimum costs and increase its competitive advantage automatically. (Daniels et al., 2015).

In 2022, the poverty rate in rural areas will be 12.36% higher than that in urban areas, which is 7.53%. The absolute number of poor people in Indonesia was 26.36 million, while the population vulnerable to becoming poor was 112 million in September 2022. The main contributor to poverty in Indonesia is inflation in the food and energy sectors; this has consequences for the policies that need to be made by the government. Therefore, the total number of poor and vulnerable people is 138.36 million people, or approximately 50% of the total population of Indonesia. This dualistic situation occurs in Indonesia; approximately 50% of poor people are involved in the industrial sector. Therefore, poor groups who are willing to earn low salaries continue to exist.

Groups of poor people involved in the production process in these manufacturing companies are easily influenced by political and social issues. This group easily bribes and influences other parties to bring them to the will of the political elite. Often, welfare issues raised by certain elites, these poor groups, cause labor demonstrations to drag on, making entrepreneurs feel worried about the demands and protests placed on their companies. Therefore, entrepreneurs will consider building factories in areas that are safe for their businesses in Indonesia.

The literacy parameter coefficient of 0.059 shows that every one-unit increase in the literacy rate will increase 0.059% of the US dollar FDI inflow to Indonesia in relative terms. Through the results of this research, it has been proven that literacy has supported FDI inflow to Indonesia on the basis of the results of research by Choong and Lam (2010), Bekana (2016), Suliman and Mollick (2009), Paolino (2009), Naude and Krugell (2007). This literacy component, as a human capital component, has been proven to attract FDI to Indonesia. However, it is not the highest in influencing FDI compared with other independent variables, such as research results from Paolino (2009). However, foreign investors still consider guaranteeing productivity from human resources, which comes from increasing literacy.

Over the last decade, the Indonesian government has had a literacy program for the community. First, the National Movement to Accelerate the Achievement of Nine Years of Compulsory Basic Education and Eradicate Illiteracy with the motto Literacy Creates Strength. The government has established Community Learning Centers and other nonformal education networks, and these programs have quickly achieved widespread coverage, with 7,073 locations serving more than 75,000 villages. (Kwilinski et al., 2023). Second, increasing digital literacy and including digital finance in the community is ongoing. According to the results of the 2022 National Survey on Financial Literacy and Inclusion, the gaps between the level of literacy and financial inclusion are 49% and 85%, respectively. This statement shows that there is still a gap between people who use financial products and services but are not very literate about the financial products and services they use.

Conclusions

Therefore, by processing cross-sectional panel data for all provinces and time series for 13 years from 2009-2021 via the best random effects model approach, the authors prove that the independent variables Gross Domestic Regional Products, Domestic Investment, GINI Coefficient, and Literacy influence FDI inflow to all provinces in Indonesia.

The development of gross domestic regional products reflects the development of people's purchasing power, which will attract FDI inflow to Indonesia. The government's discoveries of natural resources and changes in mineral policies, such as nickel and others, have contributed to Indonesia's state revenues. Improvements in education and health service facilities have increased human capital

and prevented residents from going to school and seeking treatment abroad, thereby reducing outbound financial flows.

It is suspected that the coefficient of the Gini coefficient is ambiguous as to whether it is positive or negative towards FDI inflow. The coefficient of the Gini coefficient is negative, which means that the relationship between the two variables is opposite, indicating that foreign investors will consider a lower Gini coefficient value, indicating a more even income range between the rich and the poor. This is a hope that shows that the income structure and purchasing power are improving so that it will attract more FDI to Indonesia and vice versa. There is a finding that is novel from this research, namely, the coefficient of the Gini coefficient, which has a positive value of 10.77, which means that every one unit increase in the Gini coefficient will increase FDI by 10.77% in million US dollars. The greater the Gini coefficient is, the greater the income of the community, the greater the number of rich groups, and the greater the number of poor groups. (Daniels et al., 2015).

The expected parameter coefficient value of the Gini coefficient variable is negative, so the Gini coefficient variable and FDI to Indonesia are in the same direction. Our findings are that the parameter coefficient of the independent variable of the Gini coefficient is positive. This finding is not in the direction expected in the model or theory. Therefore, the authors conclude that three types of gaps exist: theoretical gaps, practical knowledge gaps, and empirical gaps. There are 10 findings by the World Bank regarding Indonesia's rapid recovery, which have led foreign investors to continue to believe in the future of the Indonesian economy (The World Bank, 2022). First, the Indonesian economy experienced an acceleration in growth of 3.7 percent at the end of 2021 as the country emerged from the COVID-19 delta wave. Furthermore, Indonesia's economic growth increased to 5 percent (yoy) in 2022. Second, large export-oriented companies and businesses with high value-added services have recovered faster than SMEs have. Third, the budget deficit narrowed in 2021 (from 6.1 percent of GDP in 2020 to 4.6 percent in 2021) because of income recovery and slowing spending. Fourth, with better consumer confidence and trade terms, Indonesia's economic growth is projected to reach 5% by 2022. Fifth, a structural policy reform programme is needed to support growth and reduce dependence on short-term macro stimuli to restrain prices from cost-push inflation pressures. Sixth, structural reforms, namely, taxation, the business environment, downstream industry development, and the financial sector, are needed. Seventh, policies that have the opportunity to address the main constraints of the financial sector are needed. Eighth, expanding lending and using financial services through new products and services provides access to finance and facilitates the transition to a more sustainable economy. Ninth, digital finance, competition, and healthy financial infrastructure are key in allocating resources more efficiently. Tenth, financial sector stability plays an important role in efficiently allocating economic resources.

Literacy is a component of human capital and a labour production factor for companies to produce consumer goods and services. Every company is looking for this productivity in its strategic role for survival and competition in the market. Workers who have this literacy will find it difficult for competing companies to imitate. If competing companies can imitate, however, the company will incur many costs. The development of market demand, which is always changing in terms of the quantity and variety of products, truly requires workers with high literacy.

This research has several limitations. Although researchers have employed the static panel methodology for further analysis, an alternative methodology exists that utilizes a dynamic panel approach incorporating the lagged dependent variable. This dynamic panel methodology allows for

the prediction of both short-term and long-term effects and their respective elasticities. Two widely used techniques for dynamic panel analysis are the generalized method of moments (GMM) by Arellano–Bond Estimation (1991), the difference generalized method of moments (GMM), and Blundell & Bond (1998), the system GMM estimator (Law, 2018).

Author Contributions: Substantial contribution to the research idea, S.B. and J.T.P.; Substantial contribution to the methods, S.B.; Substantial contribution to the discussion and conclusions, S.B. and J.T.P.; Drafting of the manuscript, S.B. and J.T.P.; Obtaining funds, J.T.P.; Statistical and technical support, S.B.; Research group leadership, J.T.P.; All authors have read and agreed to the published version of the manuscript.

Funding: This research received financial support from the Office of Research and Publication (ORP) of the Faculty of Economics and Business Universitas Pelita Harapan, Karawaci, Tangerang, Indonesia.

Data availability statement: The data supporting the findings of this study are available on request from the corresponding author.

Acknowledgements: The researchers would like to thank the Office of Research and Publication (ORP) of the Faculty of Economics and Business Universitas Pelita Harapan, Karawaci, Tangerang Indonesia, for supporting the research.

Conflicts of interest: The authors declare no conflicts of interest.

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