Sofilda, Eleonora; Nurhaida, Dida; Hamzah, Muhammad Zilal

Article

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Foreign direct investment experience in middle income countries

Eleonora Sofilda[a], Dida Nurhaida[b] and Muhammad Zilal Hamzah[a]

[a]Doctoral Program in Economics, Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia; [b]Diploma Program in Islamic Finance and Banking, Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia

ABSTRACT

This study was conducted to identify the variables that impact FDI inflows to enhance the economies of Middle-Income Countries. Its unique contribution lies in integrating the Ease of Doing Business Rankings (EoDB) indicator with the Corruption Perception Index (CPI). This study also added control variables such as Gross Domestic Product (GDP), Population, Human Development Index (HDI), Labor Force, Exchange Rate, and Infrastructure Budget for 2010–2019. This study used a Panel Regression Analysis with the following procedure to choose the best-fit model. The main finding is that only one indicator of the EoDB, Paying Taxes, has a positive and significant impact on FDI. Another interesting result is that HDI and the Labor Force have a positive and significant influence on FDI. Countries with higher HDI tend to have better infrastructure, a skilled workforce, and greater social stability, all of which are attractive to foreign investors. This study also finds that the EODB rankings often reflects how low transaction costs are for investing in a country. Countries with better EODB rankings tend to have better institutions, which in turn attract more investment. Policymakers in each Middle-Income Country must pay attention to investment and regulatory policies, fiscal incentives, the availability of skilled labor, the quality of human resources, adequate infrastructure, and large market potential.

IMPACT STATEMENT

This study explores the variables influencing Foreign Direct Investment (FDI) in Middle-Income Countries, highlighting the integration of the Ease of Doing Business Rankings (EoDB) and the Corruption Perception Index (CPI). The findings highlight the importance of reforming the tax system and administrative processes to improve the business climate and boost the economy. Additionally, improving human capital is crucial for a country's competitiveness. Countries with higher HDI typically have better infrastructure, a skilled workforce, and greater social stability, making them more attractive to foreign investors. These implications suggest that each country must strive to enhance its economic environment. Specifically, China should focus on improving its performance in starting businesses and protecting minority investors. India and Indonesia need to streamline bureaucratic processes to facilitate business operations. Countries with low HDI, such as India, Bangladesh, and Myanmar, should prioritize improving their HDI to attract more foreign investment.

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Introduction

Foreign Direct Investment (FDI) is an integral part of an effective international economic system and a major catalyst for development (Marjanović & Domazet, 2021). Developing countries increasingly view the system as a source of economic development, modernization, income growth, and employment. In addition, FDI is a crucial fund for expanding growth, and inflow can generate many benefits such as knowledge, infrastructure, welfare, and industrial productivity. Every country has liberalized its regimes and pursued other policies to attract investment. The issue of pursuing domestic policies has been addressed to maximize the benefits of a foreign presence in the domestic economy. Most empirical studies conclude that FDI contributes to factor productivity and income growth in host countries. However, assessing the magnitude of the impact is difficult, because large inflows often concur with high growth rates triggered by unrelated factors.

CONTACT Dida Nurhaida dida.nurhaida@trisakti.ac.id Diploma Program in Islamic Finance and Banking, Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia.

The current economic situation has made it more difficult for Indonesia and other countries to avoid a middle income trap. Bangladesh, Indonesia, Myanmar, and India are classified as lower-middle income countries, whereas China, Malaysia, the Philippines, and Vietnam are classified as upper-middle income countries. Indonesia is a lower-middle income country that attempts to attract more FDI through competitive and unfriendly investment regulations. Convoluted bureaucrats and overlapping regulations are viewed as the main problems investors face regarding their investment preferences. Contractor et al. (2021), stated that the impact of the business landscape on FDI can be observed through the Ease of Doing Business (EoDB) index by the World Bank. The assessment of the correlation between the business ecosystem and economic advancement, FDI inflows, and entrepreneurial activities often relies on the EoDB ranks. Figure 1 shows the EoDB ranks of ASEAN countries in 2020.

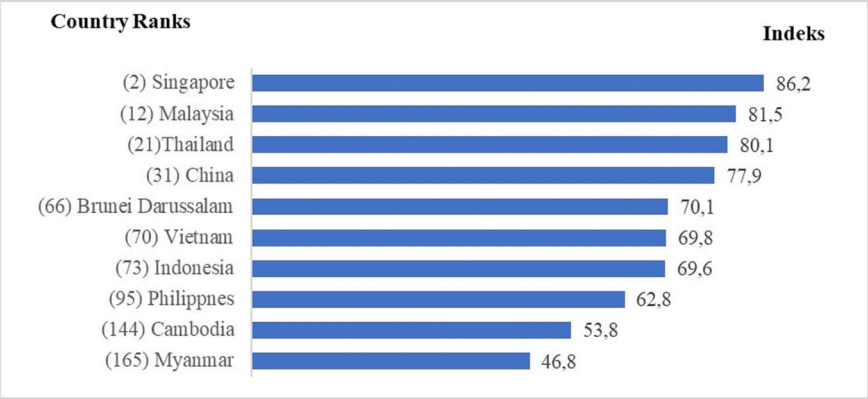

Figure 1. EoDB Rankings Data for East Asia & Pacific 2020.
Source: World Bank, processed.

According to Figure 1, Singapore and Malaysia have the highest EoDB rankings compared to the others, while Indonesia ranks 73rd. The EoDB was developed by the World Bank and has several indicators and categories. The variables were grouped into 10 categories, namely, "starting with business," "dealing with construction permits," "obtaining electricity," "registering property," "obtaining credit," "protecting minority investors," "paying taxes," "trading across borders," "enforcing contracts," and "resolving insolvency." Each category represents a critical aspect of business operations and collectively provides a comprehensive framework for analysis and evaluation. From the figure above, it is also interesting to note that Indonesia and the ranks below it such as the Philippines, Cambodia, and Myanmar, are very far behind their neighbors such as Malaysia and Singapore. One important factor, as is the case in Indonesia, is the instability of the Indonesian government, which in turn creates opportunities for bribery and corruption, which in turn will certainly make EoDB no longer easy (see also Suryanta & Patunru, 2022; Dang & Nguyen, 2021).

This study contributes to the extensive body of research on the topic of the EoDB on FDI. This includes the Corruption Perception Index (CPI) which represents the effect of perceived corruption on the decision to invest in a country. Corruption is a source of uncertainty and rising costs for businesses (Wu et al., 2023). It's adverse impact on institutions can impede economic growth by fostering uncertainty, creating an unstable business environment, heightening political risks, and inflating costs for investors. Consequently, these factors collectively serve to curtail FDI inflows.

Other significant control variables that can influence FDI include the Human Development Index (HDI) and Gross Domestic Product (GDP). According to Endogenous Growth Theory, investment in human capital (such as education and health) and technology can promote long-term economic growth, which, in turn, can attract more FDI (Acs & Sanders, 2021). Additional control variables like population, labor force (LF), exchange rate (ER), and public infrastructure budget (PIB) also play crucial roles. A larger population creates higher demand, while a robust labor force ensures the availability of workers. The exchange rate affects investment costs, and the public infrastructure budget (PIB) supports the enhancement of FDI.

Therefore, this study aims to evaluate the effects of these variables in generating recommendations for the government. According to most prior studies, the variables that explain capital inflow to host countries include corruption (Brada et al., 2019; Ibrahim et al., 2022; Suryanta & Patunru, 2022), regulational problem

(Faku, 2022), and tax burden (Dang & Nguyen, 2021), among others. The novel aspect of this study is that it includes EoDB, infrastructure budget, CPI and HDI as variables that explain capital inflow to host countries.

Literature review

A literature review was conducted to explain the theoretical and empirical perspectives to understand the choice of parameters and aspects of the research problem. Investments in this context are an economic concern in all countries. This factor affects growth in the long run, as the theory of economic development has increased over the years. Todaro and Smith (2020) divided the theory into four aspects, namely (i) linear stage of the growth model, (ii) theories and patterns of structural change, (iii) the international-dependence revolution, and (iv) neoclassical theory. Rostow's growth model is a well-known classical economic development theory. This model states that countries are subject to five stages: (i) traditional society, (ii) the precondition for take-off into self-sustaining growth, (iii) takeoff, (iv) drive to maturity, and (v) high mass consumption (Rostow et al., 2016).

Another well-known model is Harrod–Domar Growth developed by Sir Roy Harrod and Evsey Domar in the 1930s and 1940s, which emphasizes the crucial role of investment in the economic growth process (Hochstein, 2020). Investment income and the economy are created by expanding production capacity. Real income and output constantly increase, provided that net investments are available and are still in progress. These factors should occur at the same pace to avoid excess capacity and maintain an equilibrium income level. This forces employers to limit spending and shift the steady economy out of track. Todaro and Smith (2020) stated that the growth rate of national income is directly or positively related to the savings rate in the Harrod-domain model.

The Solow growth model (Solow, 1996) views labor productivity or output per worker as the most determinant factor of economic growth. The model uses a production function whose outputs are a function of capital and effective labor (Dykas et al., 2023). Moreover, the assumptions adopted in the model lead to the Solow equation, which describes an increase in capital per unit of effective labor that represents the difference between investment/savings and capital decline per unit of labor (Dykas et al., 2023). Specifically, investment is viewed as the most significant factor affecting short-term GDP after consumption in the short run. In Indonesia, the concept contributes a 20–30% contribution to GDP, while consumption has dominated the share over the years. Mankiw (2021) viewed investment as a bundle of inputs purchased to increase capital accumulation. Furthermore, Mankiw (2021) argued that the real interest rate negatively affects investments. Hymer (1960) stated that there is a difference between direct investment and portfolio investment in terms of behavior. He found that in the United States' Crisis Periods, portfolio investment drastically declined, while a slight decline occurred in the direct period (Hymer, 1960). However, the first attempt to explain FDI was made through the Heckscher–Ohlin model, which assumes perfect competition and differences in relative factor intensities across countries (Sarker & Serieux, 2023). Moreover, in his work, international operations (a type of direct investment) allowed enterprises to invest abroad to remove competition between foreign enterprises and enterprises in other countries. Monopolistic advantage theory implicitly states that FDI requires structural market imperfections to flourish (Sarker & Serieux, 2023). Dunning identified the most advantageous specialties for foreign enterprises in choosing to locate production abroad, such as ownership of production and technology, location, and internalization (Sarker & Serieux, 2023).

Several studies have reviewed the correlation between investment and economic growth. Meyer (2022) shows that economic growth is affected by domestic direct investment (DDI). According to Almfraji and Almsafir (2014) and Yeboua (2021), FDI impacts economic growth, and investment is also related to the availability of human capital in host countries. Ogundari and Awokuse (2018) state that economic growth can be generated by an increase in human capital quality and that skills are affected by education and health. In addition, an extended type of education should be pursued to provide personal attributes and increase productivity. Kheng et al. (2017) evaluated the causal direction of human capital FDI in 55 countries during 1980–2011. This study reveals that there is significant bidirectional causality between the two. Hence, their development policies must be coordinated. Furthermore, human capital quality in China affects FDI inflows (Salike, 2016).

Investments are commonly categorized into DDI and FDI, in which several investors invest capital both domestically and abroad. FDI is regarded as an activity capable of obtaining numerous benefits and prompting every country to actively pursue strategies to attract an increased number of foreign investors. Many studies

have been conducted on the attractiveness of FDI. Denisia (2010) mentioned research on production cycles, which divides them into four stages: innovation, growth, maturity, and decline. In the initial stage, manufacturers possess new technology, create and standardize products, and promote them in the market. In the second stage, a competitor imitates the product's processes and forces original manufacturer to either export or produce new parts in another countries. This theory can be related to FDI, and when investments are carried out abroad, firms face barriers such as regulatory problems (Faku, 2022). On the third stage, if they can maintain their advantage over their competitors then they will enjoy their cash cow period, even in the long term. Otherwise, then in the fourth stage, they will experience a decline, even close down the business.

Uncertainty increases the difficulty of investments, as reported in several studies. Suryanta and Patunru (2022) show that unskilled labor, an institutional factor (corruption), is an important factor affecting FDI in Indonesia. Dang and Nguyen (2021) found political institution, tax burden, inflation, institution quality have significant effects for FDI inflow in seven ASEAN countries. According to Contractor et al. (2021), more efficient regulations and procedures, stronger protection for minority investments, and better infrastructure for international trade across borders can attract FDI. Therefore, the government should address its concerns regarding regulations and procedures. Brada et al. (2019) and Ibrahim et al. (2022) investigated the effects of corruption variables on FDI. The results show that corruption in the host country is statistically significant. Contradictory results were found by Thede and Karpaty (2023) for Sweden's FDI between 1997 and 2015. The study concludes that corruption is a competitive advantage for a stimulus. Reiter and Steensma (2010) examined a different aspect of this research in investigating human development, corruption rate, and FDI. These results indicate that human development has a strong positive impact on FDI when corruption levels are low. Gohou and Soumaré (2012) conducted explorative research and found that FDI reduces poverty in Africa. According to Reiter and Steensma (2010) and Gohou and Soumaré (2012), improvements in human development can attract more FDI.

On the other side, Gohou and Soumaré (2012) conducted explorative research and found that FDI reduces poverty in Africa and found that an improvements in human development can attract more FDI. Meanwhile, Kumari and Sharma (2017) stated that human capital is a significant factor in FDI inflows. This is not related to administrative steps such as regulations and procedures because economic factors are important concerns for investors. Appiah-Kubi et al. (2021) conclude that tax incentives are effective in attracting FDI to Africa. Corcoran and Gillanders (2015) showed that the impact of the EoDB on FDI occurs in middle-income countries. According to Danzman and Slaski (2021) taxes can attract FDI inflow, while according to Sirin (2017), fiscal incentives can attract FDI inflow. The tax problem is only considered in non-OECD countries (Esteller-Moré et al., 2020). Meanwhile, Ngwaba (2023) stated that infrastructure, government policies, and natural resources have a greater influence than tax factors on FDI inflows in developing countries. Rehman et al. (2024) showed that infrastructure development has a significant effect on FDI inflows in developing countries. Based on insolvency risk, Van Cauwenberge et al. (2019) stated that firms receive more systemic risk after engaging in FDI because of their international networks and global supply chains. According to Corcoran and Gillanders (2015), EoDB indicators are significant against FDI because resolving insolvency is a part of the EoDB indicators. Research by Bin Nurdin et al. (2023) suggest that the EoDB has a notable impact on FDI inflows across various economic categories, including High Income, Middle Income (Upper and Lower), and Low-income countries.

These previous results were used to develop the hypotheses of this study. According to Van Cauwenberge et al. (2019), Contractor et al. (2021), Corcoran and Gillanders (2015), Suryanta and Patunru (2022), Sirin (2017), Appiah-Kubi et al. (2021), and Danzman and Slaski (2021), regulations or policies in the host country can deter investors and affect their preference for investment. The World Bank reports four indicators of the EoDB, such as starting a business, protecting minority investors, resolving insolvency, and paying taxes. As such, this study posits the following four hypotheses.

H1: There is a significant relationship between starting a business and FDI.

H2: There is a significant relationship between protecting minority investors and FDI.

H3: There is a significant relationship between resolving insolvency and FDI.

H4: There is a significant relationship between tax payments and FDI.

According to the research, corruption (Brada et al., 2019; Ibrahim et al., 2022; Suryanta & Patunru, 2022; Thede & Karpaty, 2023), HDI (Kheng et al., 2017; Kumari & Sharma, 2017; Ogundari & Awokuse, 2018; Salike, 2016; Yeboua, 2021), GDP (Sijabat, 2023), labor force (Suryanta & Patunru, 2022), the exchange rate (Zhang & Zhang, 2018), and infrastructure budget (Khadaroo et al., 2010) are used as control variables to develop the following hypotheses.

H5: There is a significant relationship between GDP and FDI.

H6: There is a significant relationship between population and FDI.

H7: There is a significant relationship between perceptions of corruption and FDI.

H8: There is a significant relationship between HDI and FDI.

H9: There is a significant relationship between the exchange rate and FDI.

H10: There is a significant relationship between the labor force and FDI.

H11: There is a significant relationship between public infrastructure budget and FDI.

Based on those hypothesis, furthermore, the research framework was created and can be seen in the following Figure 2.

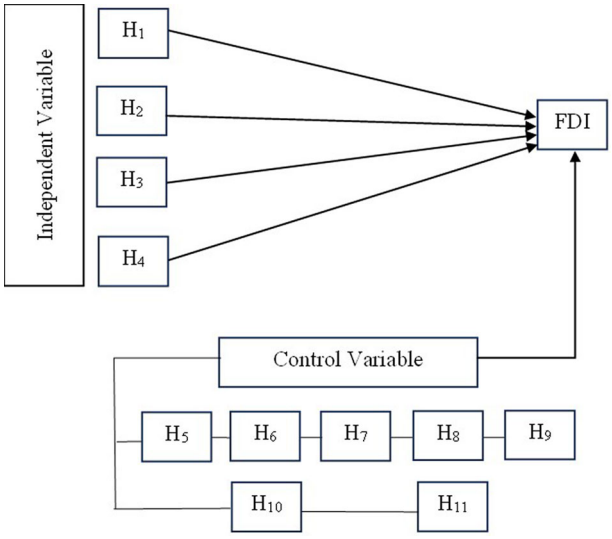

Figure 2. Research framework.

Research methodology

The data covered a range of important socioeconomic indicators, such as FDI, starting business data, protecting minority investor information, paying tax records, resolving insolvency figures, GDP, population statistics, CPI, HDI, exchange rates, labor force data, and infrastructure budget share on GDP. Several middle-income countries were selected as subsamples: Indonesia, India, Bangladesh, the Philippines, Vietnam, Myanmar, China, and Malaysia. The data were collected from trustworthy sources such as government reports from the World Bank, Transparency International (transparency.org), and reliable institutions. This was conducted by accessing official reports and downloading datasets from online platforms.

Further analysis was performed using a panel-data regression model. A data panel connects cross-sectional and time-series data by offering several advantages for enhancing the degrees of freedom and

providing comprehensive insights. According to Gujarati (2021), three models are used for data regression: the common effects model (CEM), fixed effects model (FEM), and random effects model (REM) (Levin et al., 2002; Pesaran, 2015). CEM uses the least squares method and a pooled technique to combine cross-sectional and time-series data. The FEM model incorporates individual-specific effects through the least-squares dummy technique estimation. In contrast, REM conserves degrees of freedom and enhances estimation efficiency by using generalized least squares for parameter estimation.

The models used in this study estimate the variables that affect FDI. Some of the variables used in this equation are (i). Dependent (ii). Independent, and (iii). Control Variable. FDI and EoDB are the dependent and independent variables, respectively. The four indicators used for the EoDB are starting a business (SB), protecting minority investors (PMI), paying taxes (PT), and resolving insolvency (RI). The control variables used were gross domestic product (GDP), population (Pop), corruption perception index (CPI), human development index (HDI), exchange rate (NER), labor force (LFOR), and public infrastructure budget share (IB/GDP), as shown in Table 1.

Table 1. Variable classification and description.

Variables	Variable name	Description	Measurement	Source
FDI	Foreign Direct Investment	Refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital.	USD	World Bank
SB	Starting Business	Measured the number of procedures, time, cost and paid-in minimum capital requirement for a small- to medium-size limited liability company to start up and formally operate in each economy's largest business city.	Index (0–100)	World Bank
PMI	Protecting Minority Investors	Measured the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse.	Index (0–100)	World Bank
PT	Paying Taxes	Record the taxes contribution from medium-sized companies in a year, as well as other burdens of collecting the taxes.	Index (0–100)	World Bank
RI	Resolving Insolvency	Calculate the recovery rate, which was recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings.	Index (0–100)	World Bank
GDP	Gross Domestic Product	The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	USD	World Bank
Pop	Population	Refers to total number of people living in specific region (country)	People	World Bank
CPI	Corruption Perception Index	The index which ranks countries "by their perceived levels of public sector corruption, as determined by expert assessments and opinion surveys.	Index (0–100)	Transparency.org
HDI	Human Development Index	Summary measure of average achievement in key dimensions of HDI : a long and healthy life, being knowledgeable, and having a decent standard of living	Index (0–100)	UNDP
NER	Exchange Rate	Refers to the value of one currency in terms of another currency	Ratio	World Bank
LFOR	Labor Force	Labor forces comprises people ages 15 and older who supply labor for the production of goods and services during a specified period.	People	World Bank
IB/GDP	Infrastructure Budget Share on GDP	Percentage of Infrastructure Budget to GDP	% of GDP	World Bank

For this research, the regression model used is specified by the following equation:

$$FDI_{it} = \alpha + \beta_1 SB_{it} + \beta_2 PMI_{it} + \beta_3 PT_{it} + \beta_4 RI_{it} + \beta_5 GDP_{it} + \beta_6 POP_{it} + \beta_7 CPI_{it} + \beta_8 HDI_{it} + \beta_9 NER_{it} + \beta_{10} LFOR_{it} + \beta_{11} IB/GDP_{it} + \mu_{it} \quad (1)$$

where FDI represents FDI inflow, α represents the intercept or constant, β represents the coefficient, SB represents starting a business, PMI refers to protecting minority investors, PT refers to paying tax, RI refers to resolving insolvency, GDP stands for gross domestic product, POP refers to population, CPI represents corruption perception index, HDI represents human development index, NER represents exchange rate, LFOR represents labor force, IB/GDP represents the share of infrastructure budget to GDP, and μ refers to the error term over the year. Before performing the estimation, the panel regression has three best-fit models, namely CEM, FEM, and REM, to select the best estimation through the Chow test (CEM or FEM), Hausman test to select REM or FEM, and LM test to select CEM or REM.

Results and discussion

Before carrying out estimates, the first step taken in this study is to explain the statistics of the data that will be processed in each selected country. Figure 3 shows the average FDI net inflow in each country.

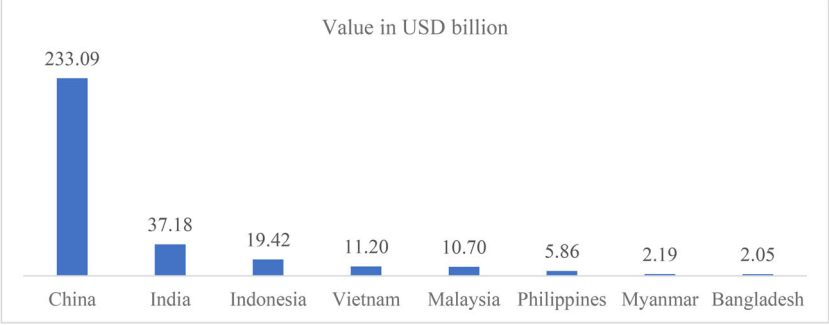

Figure 3. FDI Net Inflow (2010–2019).
Source: World Bank, processed.

According to Figure 3, China (US$233.09 billion) and India (US$ 37.18 billion) have higher investment inflows than the others from 2010 to 2019. Bangladesh has a lower net inflow than other countries, and the performance of the starting a businesses in each country is shown in Figure 4.

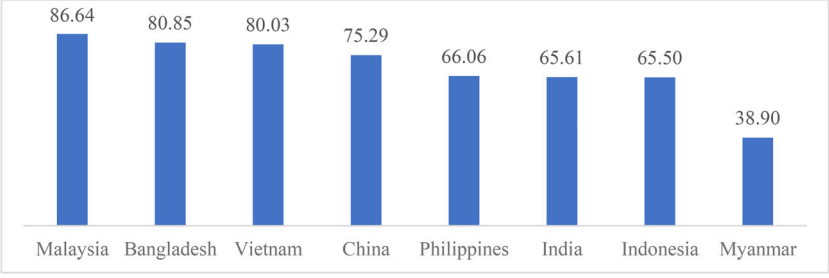

Figure 4. Starting Business Performance Score in 2010–2019.
Source: World Bank, processed.

According to Figure 4, Malaysia (84.64) and Bangladesh (80.85) had higher scores than others from 2010 to 2019. Myanmar has a lower starting business score, and its performance in protecting minority investors in each country is shown in Figure 5.

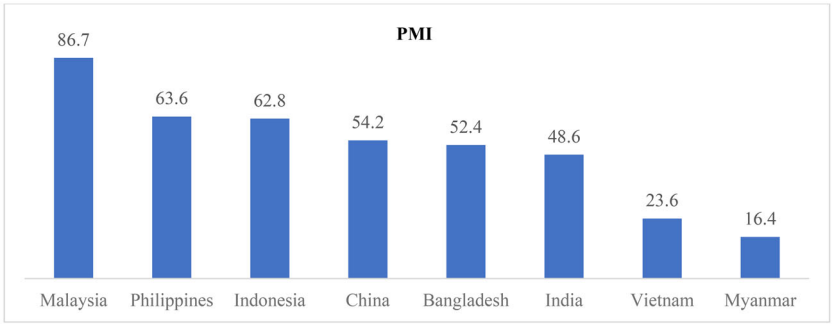

Figure 5. Protecting Minority Investor Performance in 2010–2019.
Source: World Bank, processed.

According to Figure 5, Malaysia (86.7) and the Philippines (63.6) had higher scores than other countries from 2010 to 2019. Myanmar has a lower protecting minority investor score, and the tax payment performance of each country is as follows:

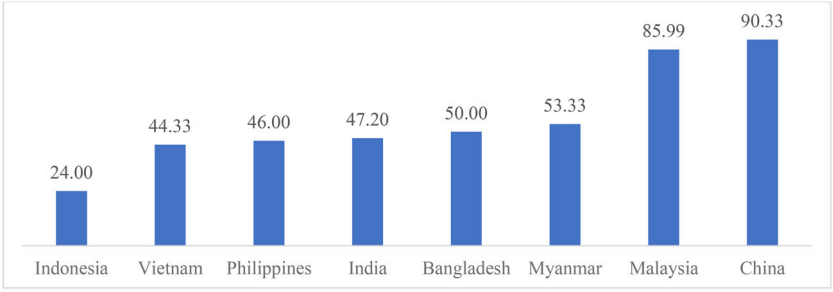

Figure 6. Paying Taxes Score Performance in 2010–2019.
Source: World Bank, processed.

As shown in Figure 6, China (90.33) and Malaysia (85.99) had higher scores than the other countries from 2010 to 2019. Indonesia has a lower paying taxes score, and the performance in resolving insolvency of each country is shown below:

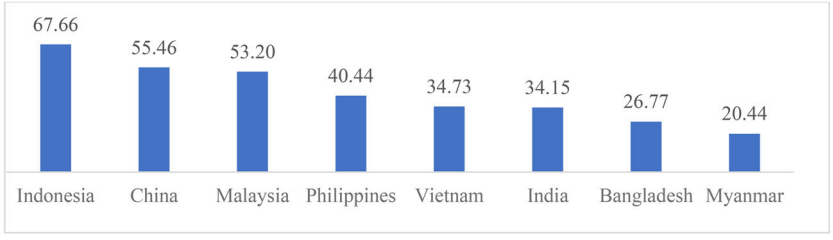

Figure 7. Resolving Insolvency Performance in 2010–2019.
Source: World Bank, processed.

According to Figure 7, Indonesia (67.66) and China (55.46) had higher scores than the other countries from 2010 to 2019. Myanmar has a lower resolving insolvency score and GDP of each country is as follows:

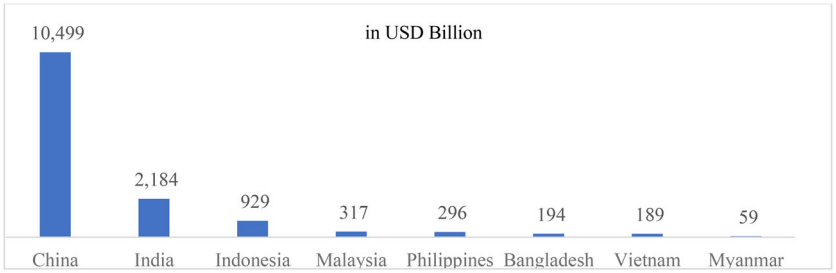

Figure 8. GDP Performance in 2010–2019.
Source: World Bank, processed.

According to Figure 8, China (US$ 10.499 billion) and India (US$ 2.184 billion) scored higher than other countries from 2010 to 2019. Myanmar has a low GDP, and the population of each country is as follows:

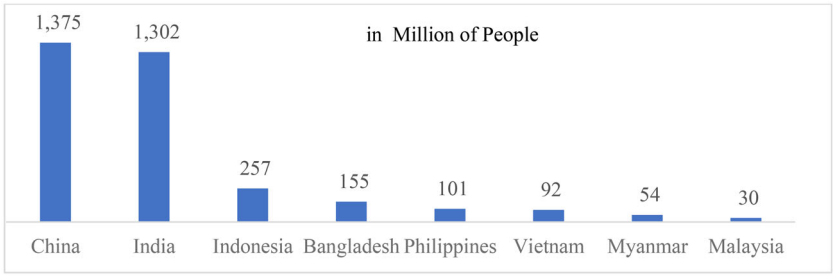

Figure 9. The Number of Population in 2010–2019.
Source: World Bank, processed.

According to Figure 9, China (1,375 million people) and India (1,302 million people) had higher scores than other countries from 2010 to 2019. Myanmar has a low population rate, and the CPI of each country is as follows:

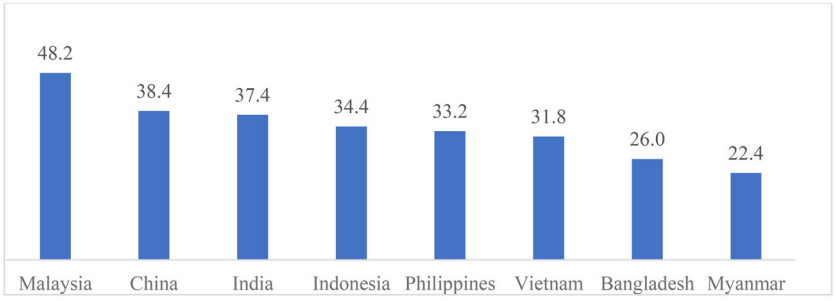

Figure 10. Corruption Performance Index (CPI) performance in 2010–2019.
Source: World Bank, processed.

According to Figure 10, Malaysia (48.2) and China (38.4) scored higher than other countries from 2010 to 2019. Myanmar has the lowest CPI, and the HDI performance of each country is as follows:

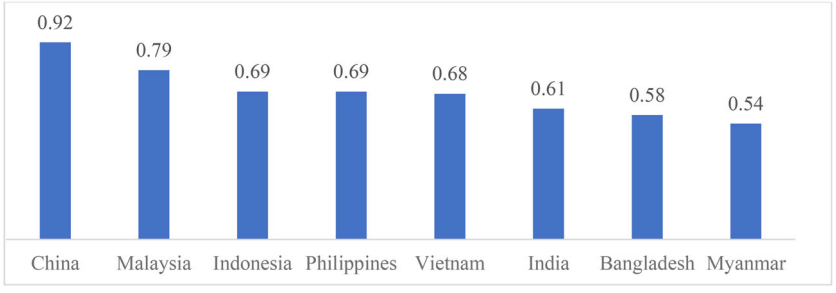

Figure 11. HDI performance in 2010–2019.
Source: World Bank, processed.

According to Figure 11, China (0.92) and Malaysia (0.79) had higher scores than the other countries from 2010 to 2019. Myanmar has a lower HDI, and the number of laborers in each country is as follows:

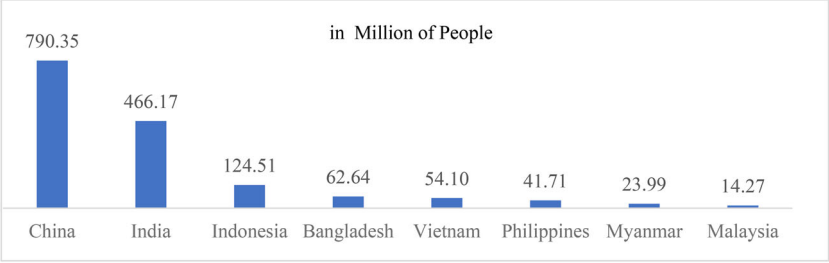

Figure 12. The number of Labor Force in 2010-2019.
Source: World Bank, processed.

According to Figure 12, China (790.35 million people) and India (466.17 million people) have higher scores than the others from 2010 to 2019. Myanmar has a lower HDI in terms of labor force, and the exchange rate performance for each country is as follows:

Table 2. Exchange rate performance in 2010–2019.

Country	Local Currency Unit (LCU)
Malaysia	3.63
China	6.50
Philippines	46.53
India	60.07
Bangladesh	78.62
Indonesia	11,803.71
Vietnam	21,368.70

Source: World Bank, processed.

According to Table 2, Vietnam and Indonesia had lower rates in US dollars than the other countries from 2010 to 2019. Malaysia has a strong U.S. dollar rate, and the share of the infrastructure budget in GDP performance for each country is as follows:

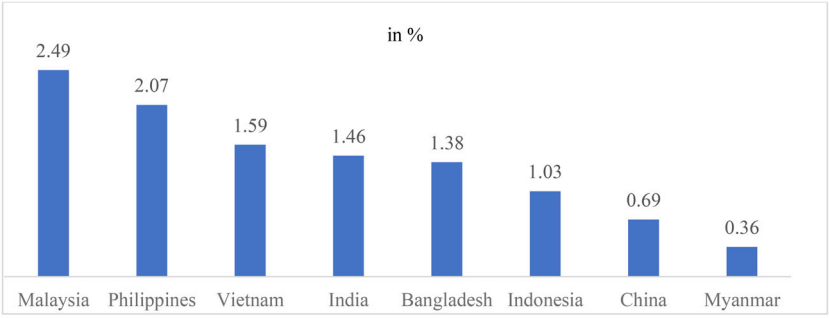

Figure 13. The Share of Infrastructure Budget on GDP Performance in 2010–2019.
Source: World Bank.

According to Figure 13, Malaysia (2.49% of GDP) and the Philippines (2.07% of GDP) performed better than the other countries from 2010 to 2019. Myanmar has a lower infrastructure budget than other countries. This section also includes the regression analysis to determine the most significant variables. The results of the model selection test are reported before testing the hypotheses.

Before conducting the empirical estimation, it is important to check whether the included variables are stationary. In this study, several analytical tools were used to test stationarity, including the Levin, Lin, and Chu (LLC), LM, Pesaran, and Shin (IPS), augmented–Dickey Fuller (ADF), and Phillips–Perron (PP) tests.

Table 3. Panel root test result.

Variable	Test	LCC	IPS	ADF	PP	Status
SB	At first difference	−5.09799***	−2.65020***	46.6555***	53.7793***	I(1)
PMI	At first difference	−1.89257**	−1.33363*	48.7505***	57.0511***	I(1)
PT	At first difference	−4.16633***	−2.95192***	47.3648***	26.8949**	I(1)
RI	At first difference	−4.09018***	−4.92254***	39.5805***	41.7999***	I(1)
GDP	At first difference	−3.03460***	−2.20861**	42.4751***	44.0709***	I(1)
POP	At level	−11.5719***	−7.83997***	90.0831***	90.0831***	I(0)
CPI	At level	90.0831***	−8.48416***	34.1354**	26.5279**	I(0)
HDI	At level	−6.28824***	−2.94550***	25.5675*	46.1791***	I(0)
LFOR	At level	−4.81412***	−3.57361***	27.6973***	27.1751***	I(0)
NER	At level	27.6973***	33.7500***	−6.88612***	37.5492***	I(0)
IBGDP	At level	−2.99156***	−3.18751***	57.7303***	22.8369***	I(0)

According to Table 3, the variables that are stationary at I(0) include POP, CPI, HDI, LFOR, NER, and IBGDP, whereas variables that are stationary at I(1) include SB, PMI, PT, RI, and GDP. After conducting the unit root test, the next step was to select the model and shown in Table 4.

Table 4. Panel regression model selection testing.

Test type	T-statistic	Prob	Conclusion
Chow Test	6.859384	0.4437	Common effect model
LM Test	4.409669	0.0357	Individual effect
Hausman Test	0.000000	1.0000	Random effect model

The Chow test obtained a larger probability value (*p*-value) for the cross-sectional chi-square (alpha 5%), and the CEM was selected. Furthermore, the LM Test was performed, and a smaller *p*-value (alpha = 5%) was generated. The subsequent step was to select the form of individual effects using the Hausman Test. A larger *p*-value (alpha 5%) resulted from this test because the random effects model was the best. Table 5 shows the hypothesis testing results.

Table 5. Hypothesis testing.

		Dependent variables: FDI			
Variables	Theory	Beta	*p* value	Conclusion	Decision
Constant		−67.34798	0.0023		
SB	+	−0.061576	0.2150	Negative, not significant	H_1 rejected
PMI	+	−0.138461	0.1979	Negative, not significant	H_2 rejected
PT	**+**	**0.174362**	**0.0000***	**Positive, significant**	**H_3 accepted**
RI	+	−0.007795	0.8930	Negative, not significant	H_4 rejected
GDP	**+**	**−0.009654**	**0.0104****	**Negative, significant**	**H_5 accepted**
POP	**+**	**−2.20E − 07**	**0.0000***	**Negative, significant**	**H_6 accepted**
CPI	+	−0.220323	0.6460	Negative, not significant	H_7 rejected
HDI	**+**	**120.8115**	**0.0294****	**Positive, Significant**	**H_8 accepted**
LFOR	**+**	**7.59E − 07**	**0.0000***	**Positive, Significant**	**H_9 accepted**
NER	**+**	**−0.000545**	**0.0020***	**Negative, significant**	**H_{10} accepted**
IBGDP	+	−1.963700	0.3940	Negative, not significant	H_{11} rejected

Goodness of Fit : Adj. R^2 (96.44%).
Significance Level: *p < 0.01, ** p < 0.05.

The adjusted R^2 was approximately 96.44%, and the dependent variable and 3.56% of the independent variables could be well explained by the predictors. Several results of the partial hypothesis testing showed significant variables. For example, Paying Taxes (H3) is positive and statistically significant (alpha = 5%) for FDI. Therefore, the tax-paying score is directly proportional to the increase in FDI and Doing Business is the determining factor in attracting inflows. For example, Vietnam has reformed its tax system, including administrative processes, and contributed to the economy, specifically to the business climate. It can be concluded that the payment of taxes improves administration. This improvement can assist investors in fulfilling obligations and running businesses as well as attract more foreign investors. Meanwhile, PwC (2020) reported that the countries considered in this research were categorized as having easier taxes, as shown in Figure 14.

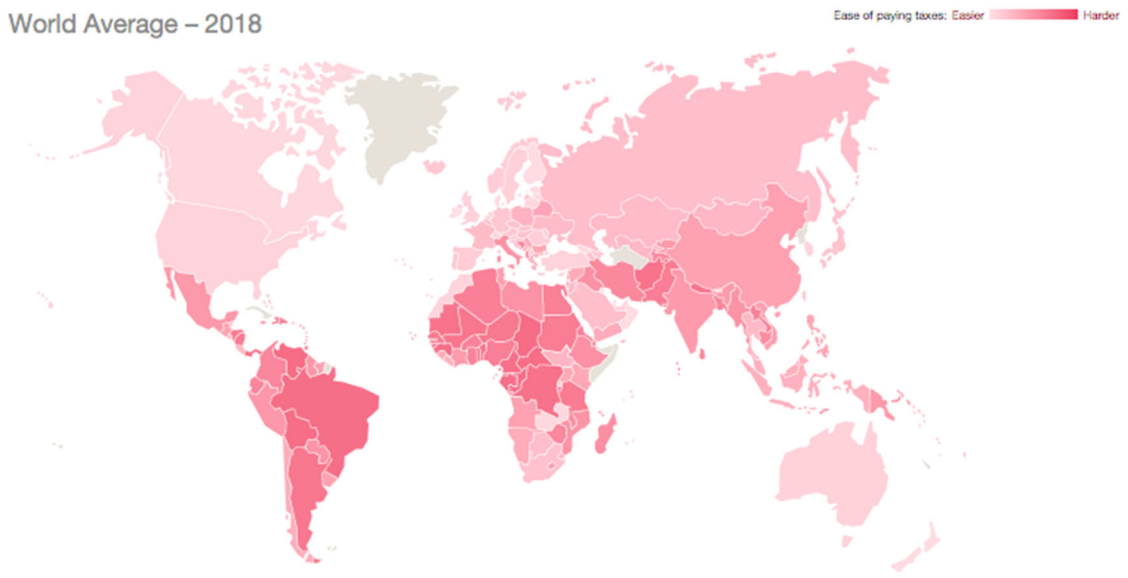

Figure 14. Paying taxes indicators.
Source: PwC (2020).

HDI (H8) and Labor Force (H9) are statistically significant for FDI inflows. The results also support those of (Gohou & Soumaré, 2012; Kumari & Sharma, 2017; Reiter & Steensma, 2010; Salike, 2016), who found that human capital can affect the inflow of FDI, specifically in developing countries. This is associated with the competitive advantage of underdeveloped or developing countries that attract more FDI through young and cheap labor. The development of science and technology has forced host countries to provide better quality human capital to enhance competitiveness. Developing countries are expected to advance their industrial and manufacturing activities.

The role of the labor force and HDI as control variables can alter the direct relationship between EoDB and FDI. Although these countries are extremely concerned with EoDB indicators, a lack of human capital quality can affect the relationship. Human capital is important for the competitiveness of each country, even with a higher EoDB rate. Insignificant variables such as Starting Business, Protecting Minority Investors, Insolvency, GDP, Population, CPI, Exchange Rate, and Share of Infrastructure budget to GDP indicate that fiscal and human capital issues are more important for investors in middle-income countries. It is very interesting for the GDP variable; based on the results, it has a significant influence on FDI but a negative coefficient.

Based on the data and results, China has the highest FDI net inflow among middle-income countries, attributed to its strong GDP, large population, high HDI, and favorable EoDB ratings. Indonesia and India exhibit similar characteristics, with their FDI net inflows driven by robust GDP and population figures. Malaysia, though smaller in size, stands out with a high EoDB ranking and the second-highest HDI level after China. It also allocates the highest infrastructure budget relative to its GDP compared to other countries. Vietnam ranks just behind Malaysia in FDI net inflow for the period 2010–2019. One key EoDB indicator, ease of starting a business, attracts foreign investors to use Vietnam as a production hub, despite its smaller population. Conversely, Myanmar, Bangladesh, and the Philippines experience low FDI net inflow and relatively low EoDB ratings. These countries also have smaller populations compared to other middle-income nations, resulting in less substantial markets.

Conclusion and suggestions

In conclusion, between 2010 and 2019, the EoDB had a positive and statistically significant effect on FDI inflows in several middle-income countries. This result is supported by previous research that focused on FDI and EoDB. Therefore, tax payments can generate more revenue for the government and attract more foreign investors to fulfill obligations and run businesses. HDI and labor force were statistically significant for FDI inflows. In this context, the development of science and technology has forced host countries to

provide better-quality human capital to enhance competitiveness. The EoDB rate decreased when the government did not improve tax administration, which affected the competitiveness of each middle-income country. The tax system was continuously improved to support other competitive advantages such as massive infrastructure development and natural resources. This improvement could increase the competitiveness of middle-income countries. Human capital is a crucial factor in investment, and development has attracted more FDI in developing countries. Even though investors preferred countries with cheaper and more skilled labor, the level of competitiveness decreased when there was no improvement.

This research provides practical implication for both government bodies and industry players based on the findings and implications derived from the study. Government stakeholders must continuously improve tax systems and fiscal policies, particularly by addressing administrative hurdles through the formulation and implementation of conducive policies and regulations aimed at providing greater ease for investors. Moreover, increasing the allocation of funds for education and research and development (R&D) initiatives is crucial for enhancing human capital. This can be achieved through various means such as bolstering vocational education, providing specialized skill training programs, and enhancing funding mechanisms. Collaboration with private entities, including universities, enterprises, and research organizations, along with research funding and scholarships, can further catalyze R&D efforts, thus creating a more favorable investment climate to facilitate FDI inflows.

Conversely, industry players are advised to prioritize R&D endeavors, thoroughly assess the market dynamics in each target country, and remain cognizant of the diverse regulatory frameworks and cultural nuances present across different nations. For instance, recognizing the disparities between countries such as China, Malaysia, and Indonesia, which are classified as upper-middle-income countries, and others such as the Philippines, Vietnam, India, Bangladesh, and Myanmar, which are categorized as lower-middle-income countries, is essential for effectively navigating distinct regulatory landscapes and enabling them to strategically position themselves for success in various markets.

To increase FDI, policy implications for each country must focus on improving their EoDB. Specifically, China should enhance its performance in starting businesses and protecting minority investors. India and Indonesia need to streamline bureaucratic processes to facilitate business operations. Human Development Index (HDI) significantly influences FDI inflows. Therefore, countries with low HDI, such as India, Bangladesh, and Myanmar, should prioritize improving their HDI. Empirical studies indicate that countries with higher HDI are more likely to attract FDI. Investors are drawn to countries with high HDI due to the potential for long-term returns, stemming from a stable business environment and a well-qualified workforce.

Authors' contributions

Conceptualization: Eleonora Sofilda, Muhammad Zilal Hamzah, Dida Nurhaida. **Data curation:** Eleonora Sofilda. **Formal analysis:** Eleonora Sofilda, Muhammad Zilal Hamzah. **Funding acquisition:** Eleonora Sofilda, Muhammad Zilal Hamzah, Dida Nurhaida. **Investigation**: Eleonora Sofilda. **Methodology:** Eleonora Sofilda. **Project administration:** Eleonora Sofilda, Dida Nurhaida. **Resources:** Eleonora Sofilda, Muhammad Zilal Hamzah, Dida Nurhaida. **Software:** Eleonora Sofilda, Dida Nurhaida. **Supervision:** Muhammad Zilal Hamzah, Eleonora Sofilda. **Validation:** Muhammad Zilal Hamzah, Eleonora Sofilda. **Writing – original draft:** Eleonora Sofilda. **Writing – reviewing & editing:** Eleonora Sofilda, Muhammad Zilal Hamzah, Dida Nurhaida.

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About the authors

Professor Eleonora Sofilda is a Lecturer and Researcher at the Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia. She holds a Master's degree in Planning and Public Policy and a Doctorate in Sustainable

Development Management. Her research interests include Economic Development, Public Policy in Economics and Sustainability.

Dr. Dida Nurhaida is a Lecturer and Researcher at the Faculty of Economics and Business, Universitas Trisakti in Jakarta, Indonesia. She holds a Master's degree in Islamic Finance and Banking and a Doctorate in Islamic Economics and Finance. Her research interests include Islamic Banking and Finance, Corporate Finance, Macroeconomics, and Entrepreneurship.

Professor Muhammad Zilal Hamzah is a Lecturer and Researcher at the Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia. He holds a Master's degree in Management and PhD in Economics. His research interests include Islamic Economics, Fiscal Decentralization, and Public Policy in Economics.

ORCID

Eleonora Sofilda http://orcid.org/0000-0002-5105-8208
Dida Nurhaida http://orcid.org/0000-0003-3920-9277
Muhammad Zilal Hamzah http://orcid.org/0000-0001-6546-4736

Data availability statement

Data and materials supporting the results of this study are available upon request. Furthermore, requests for data access should be directed to Eleonora Sofilda (eleonora@trisakti.ac.id).

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