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The Determining Factors of Foreign Direct Investment (FDI) Inflows: Empirical Studies from the Southeast Asian Countries

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Abstract:
The purpose of the study estimates the possible causal relation between direct foreign investment with intertwined political and economic factors ranging from the investment climate reform initiative, tax policy conducted by the government, size of the government, and political institution. The sample of this study consists of ten countries in the Southeast Asia region. Our study utilizes time series data of 11 years from 2010 to 2020, to empirically tested three proposed hypotheses by using panel data regression analysis. Our statistical results show that determinants of direct foreign investment can be uncovered through economic rather than political factors. This study provides a negative relationship between the political institution factor (proxied by the veto player) and FDI inflow. On the contrary, the EODB score does not affect FDI inflow by controlling covariates. Moreover, our study could not provide robust evidence that an effective average tax rate could affect the FDI inflow which is contrary to literature expectation. However, our causal inference may suggest that previous FDI inflow is the best predictor for the FDI inflow.

Keywords: FDI inflow, Southeast Asian countries, Investment climate reform, tax policy, size of government, and political institution factor.

1. Introduction

Foreign Direct Investment (here in after FDI) is a major source of financing for the global economy, and it has grown fast in the previous decade as a source of economic activity. From 2000 to 2016, the share of FDI stock in global GDP increased from 22% to 35%. (Carril-Caccia, 2018). It is commonly acknowledged that FDI enhances recipient countries' economies by contributing capital, foreign exchange, and technology, as well as increasing competitiveness and access to overseas markets (Mottaleb, 2010). Historically, industrialized economies have been key sources and destinations of international direct investment. However, since the early 2000s, emerging economies have been the favored destination for FDI inflows (Kaur et al, 2016). Foreign direct investment (FDI) has played an essential role in the expansion and global integration of developing economies (Lipsey and Sjöholm, 2011).

Many studies demonstrate that a significant factor influencing FDI is the investment climate. Dollar et al (2006) and Sekkat et al (2007), for example, found that a good business environment enhances the likelihood of obtaining greater FDI inflows. Reduced indirect barriers to FDI or promotion of FDI facilitation are critical, particularly in some critical areas such as complicated and delayed procedures, underdeveloped infrastructure, inflexible labor market conditions, and taxation regulations (Urata and Ando, 2011).

Tax policy plays a prominent role in attracting mobile capital. This legislative shift will most likely go beyond simply decreasing corporate tax rates. According to a UNCTAD report (2003), countries are increasingly adopting financial incentives to attract MNCs, with the use of local incentives to attract FDI rising in frequency and value (Jensen, 2006:54). This conditionally of aggressive tax incentive for FDI and MNC named by "the race to bottom" hypothesis. The majority of the studies analyzing the tax policies are from the economics literature. Many kinds of literature have discussed the relationship between tax policy and FDI from the perspective of tax rates or tax incentives.

Woodward and Rolfe (1993) find that tax incentives are positively related to FDI, especially the length of tax holidays. Bellak and Leibrecht (2006) analyze the impact of effective tax rates on FDI in Central and East European Countries (CEECs), and they confirm the significance of tax rates as a factor. Bailey (2018) employs meta-analysis to integrate and examine decades of data on the relationship between institutional characteristics and the attractiveness of host countries to FDI. However, some scholars, like Wheeler and Mody (1992), and Chakrabarti (2001), find no significant relationship between tax rates and FDI. Against these inconclusive findings, this study tries to fill in the lacuna of empirical results.

Political institutions also frequently play an important determinant in fostering FDI. Several studies have evaluated the efficacy of a stable and secure property rights framework for investment and growth in Europe's economic development. An investor could have gained confidence that political executives would adhere to their committed policy because there was another political institution that performed check-and-balance during the course (North and Thomas, 1973; North and Weingast, 1989; Weingast, 1995). The economic effects of political institutions can be condensed into the premise that when the government is institutionally restrained, investors benefit from a more stable and predictable policy environment. Contrary to this assertion, unconstrained governments cannot be trusted since, no matter what they claim, nothing prohibits them from backtracking and sabotaging investors' plans or diminishing investors' profits (MacIntyre 2001:86).

To study rigorously, political scientists devised a notion and measurement of veto players that are closely related to policy stability (Tsebelis 1995, 2002; Jensen, 2006), which our paper provides in greater depth in the preceding story. The veto player concept is useful because it allows us to compare and calibrate various political systems. In essence, it distinguishes political systems based on the number of people who can block or veto a policy change. A veto player is an individual or group whose approval is formally necessary for policy change or, more precisely, legislative change to continue. Because more independent individuals must agree for change to occur, the more difficult policy change becomes and consequently the more stable and predictable the policy environment as the number of veto players increases and their policy preferences diverge.

To better illustrate a better relationship between several veto players and policy risk for the investor, it is relevant to depict Figure 1 borrowed from MacIntyre (2001) which explained the number of veto players and policy risk to investors in four Southeast Asian countries during AFC 1997/1998.

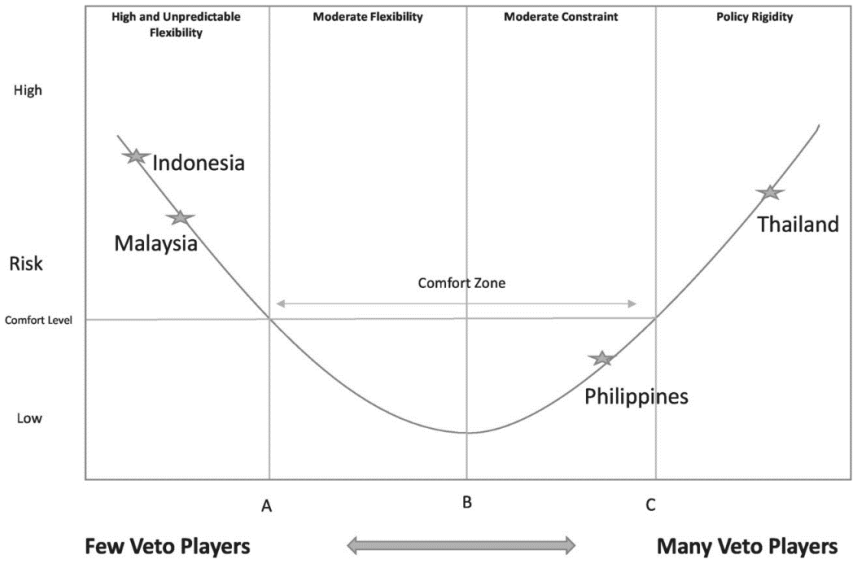

Figure 1: Number of Veto Players in Four Southeast Asian Countries
Source: MacIntyre (2001:94)

Southeast Asian countries are an interesting case as a matter of several facts. Southeast Asian countries were previously key investment destinations for international investors due to their economic development successes between 1991 and 1997, and FDI pouring into these countries during this period accounted for approximately 8% of total FDI in the world (Hoang, 2012). The Asian financial crisis of 1997 effectively ended ASEAN's golden age of luring FDI. However, the achievement of economic reform and the restoration of economic growth have recently increased FDI flows into these countries. However, although the FDI inflows to Southeast Asian countries have increased rapidly in the past two decades, the gap between each country is still considerable.

This paper aims to investigate the effect of investment climate reform by harnessing ease of doing business (EODB), tax policy by indicator effective average tax rate, size of government and political institution factor by veto player estimate on the FDI inflows in ten countries, located at the core of Southeast Asian regions: Indonesian, Malaysia, Philippines, Singapore, Thailand, Vietnam, Cambodia, Laos, Brunei, and Timor Leste. Foreign Direct Investment (FDI) is one of the main forms of modern capital internationalization. It means capital can flexibly in and out of a country without permission from to host country. Hence, a flexible capital account and fewer restrictions over capital and the stock market are needed. The International Monetary Fund defines FDI as "a category of international investment that reflects the goal of a resident in one economy (the direct investor) obtaining a long-term interest in an enterprise resident in another economy (the direct investment enterprise).

According to Pandya (2016), trade and FDI are intertwined domains that reflect the various possibilities available to globally involved enterprises. Through international trade and economic cooperation, including worker migration, the world becomes more linked. The economic literature finds two major trade-offs that divide global sales and sourcing separation (Kim and Osgood 2019). To begin, horizontal FDI refers to selling products manufactured in a foreign market rather than exporting to that market. When the costs of trading outweigh the expenses of establishing and sustaining overseas businesses, horizontal FDI is likely. Helpman (1984) proposed this theoretical model. Second, international sourcing of inputs and finished items within the firm's limits ensures control and eliminates hold-up difficulties. The second vein is more familiar with the term vertical FDI. Therefore, discussing international trade and FDI will more likely be unseparated following recent trade development and we convey this argument in our paper.

This article applies Sekkat et al. (2007)'s notion of investment climate, which is defined as infrastructure availability, sound economic, and stable political conditions. Some studies have looked at the connection between the investment environment and FDI inflows. For example, Kinda's study (2010) uses firm-level data from 77 developing nations to demonstrate that investment climate constraints stymie FDI. Simon Djankov and

his teams were part of the World Bank's economists, and they developed the Ease of Doing Business (EoDB) index to measure the investment climate. Since 2003, the World Bank has begun to publish a related report annually to assess the business environment of countries around the world. The first Doing Business study, published in 2003, the report covered 5 indicator sets and 133 economies. Currently, it covers 11 indicator sets and 190 economies. The Doing Business project began ranking economies based on the ease of doing business in 2005, and the first ranking results were released the following year. The EODB is divided into two parts: the ease of doing business rank and the ease of doing business score.

Three intertwined questions propose to be discussed and explained: first research question estimates the possibility of FDI inflow (dependent variable) hypothesized to be caused by changes in investment climate measure using the score of Easy of Doing Business (independent variable) by controlling imports of goods and services as a percentage of GDP, exports of goods and services as a percentage of GDP. *Second*, this article also discusses the so-called race-to-bottom hypothesis. Under the hypothesis, FDI inflow (dependent variable) is hypothesized to be influenced by changes in the size of government and effective average tax rate (independent variables) by controlling imports of goods and services as a percentage of GDP, and exports of goods and services as a percentage of GDP.
Third, our article aims to empirically investigate the economic consequences of political institutions by proposing a hypothesis that the FDI inflow (dependent variable) hypothesized influenced by veto players (independent variable) while controlling imports of goods and services as a percentage of GDP, exports of goods and services as a percentage of GDP. The rest of our paper organizes as follows. Part one describes the introduction and briefly discusses the theoretical background over key variable interest with empirical studies ever conducted. Part two consists of the hypothesis, variables and data, and estimation strategy. Section 3 provides results, followed by the discussion in section 4.

2. Method

2.1. Hypothesis

Our paper has three main hypotheses.
Hypothesis 1: *higher FDI inflow is positively associated with ease of doing business score* (Mottaleb and Kalirajan, 2010) and positively associated with the exchange rate and size of a country's economy by using a proxy of annual GDP growth, controlling two main variables, export and import of goods and services as a percentage of GDP. Mottaleb and Kalirajan (2010) argued that the size of an economy and its growth rate critically affect FDI inflows to a country. Moreover, investors' main objective is profit-seeking and they prefer to invest in countries that welcome foreign investment, developing countries are eager to reform their investment climate to attract foreign investors. The investment climate reform implies investor more prefer to invest in a better business climate.

Hypothesis 2: *higher FDI inflow is negatively associated with effective average tax rat*e (Jensen 2006, Devereux and Griffith 2003), *negatively associated with the size of governmen*t (Jensen 2006) and *positively associated with the exchange rate and annual growth rate, controlling two variables, export and import of goods and services as a percentage of GDP constan*t (ceteris paribus). The second hypothesis relates to the race to the bottom hypothesis which means countries are competing in lowering their corporate income tax to attract investors, as indicated by the coefficient of effective tax rate and size of government. Both coefficients are assumed to be negatively correlated.

Hypothesis 3: *higher FDI inflow is negatively associated with veto player* (Jensen, 2006) and *positively associated with the exchange rate and annual growth of GDP*, controlling other variables including export and import of goods and services as a percentage of GDP constant (Ceteris paribus). Investors prefer countries with simpler decision-making processes whereas veto players capture stability with checks and balances. While Jensen's study empirically tested the relationship between veto players and net FDI inflow; But, the argument over investor and investment departed by the study of MacIntyre (2001) which utilized the notion of veto players as political institutions that most likely has an effect over the economic institution. Veto players are defined as the president and the largest party in the legislature for a presidential system and as the prime minister and the parties in the government coalition for a parliamentary system (Beck *et al.* 2001).

2.2. Variables and Data

This study examines annual time series data for ten countries from 2010 to 2020. The main source of statistics was gathered from different sources, including the World Bank's *World Development Indicator*, the World Bank's *Ease of Doing Business Index*, the World Bank's *Database of Political Institutions*, and the University of Groningen's *Penn World Table*. Table 1 shows how we confined our estimating exercise to 9 variables. In year t, the dependent variable is FDI inflows as a proportion of GDP for country i.

While the independent variables are: (i) the ease of doing business score for nation i in year t, and (ii) the ease of doing business score for country i in year t. (iii) The average corporate income tax rate for the country I in year t. General government final consumption expenditure (% of GDP) as a proxy for government size in year t for country i, (iv). The number of veto players represents a check and balance with stability for country i in year t, (v). GDP annual growth rate for country i in year t, and (vi). Country i's exchange rate with USD in year t. Control variables contain an annual percentage of export goods and services exported abroad for country i in year t as the seventh variable, and the annual percentage of imported goods and services from abroad for country I in year t as an eighth variable.

This study additionally makes use of the World Bank's Development Research Group's Database of Political Institutions (DPI), which comprises 108 variables for 177 countries from 1975 to 1995. We will surely check the most recent publication to ensure the era of investigation. The factors detail elections, electoral laws, the type of political system, opposition and government coalition party membership, and the level of military involvement in government.

DPI also includes a variety of newly assembled variables derived from raw data, such as original measurements of checks and balances and political stability (Beck et al 2000). The number of veto players in a political system, adjusted for whether these veto players are independent of one other, as determined by the amount of electoral competition in a system, their separate party affiliations, and the electoral laws, is our major variable of interest in DPI.

Table 1 Variables, Measurement, and Data Source

Variable(s) notation in regression	Measurement	Source(s)
Dependent variable (DV)		
FDI inflow as a percentage of GDP (*Y)*	Foreign direct investment inflow as a percentage of GDP in year t, country i	World Development Indicator, World Bank
Independent variables (IV)		
Ease of Doing Business (EODB) (X_1)	Score ease of doing business in year t, country i	Ease of Doing Business Index, World Bank
FDI_{t-1} (X_2)	FDI inflow in the percentage of GDP a previous year for each country i and year t.	World Development Indicator, World Bank
Exchange rate (XR) (X_3)	Exchange rate for country compare to USD i and year t	Penn World Table 10, University of Groningen
Veto player (VP) (X_4)	Number of veto players	Database of Political Institution, World Bank
Effective average tax rate (EATR) (X_5)	Average corporate income tax rate in year t, country i	World Development Indicator, World Bank
Size of government (size_gov) (X_6)	General government final consumption expenditure (% of GDP) in year t, country i	World Development Indicator, World Bank
Control variables		
Export (Exp) (X_7)	Annual percentage of export goods and services exported abroad for country i, year t	World Development Indicator, World Bank
Import (Imp) (X_8)	Annual percentage of imported goods and services from abroad for country i, year t	World Development Indicator, World Bank

Variable(s) notation in regression	Measurement	Source(s)
GDP growth rate (GDP_gr) (X_9)	The annual GDP growth rate of country i and year t	World Development Indicator, World Bank

Source: Authors (2023)

2.3. Estimation Strategy

Our study uses panel data to answer three research questions as proposed in our previous part. Angrist and Pischke (2009: page 244) suggest that panel data estimate causal effect using a specification as follows:

$$Y_{it} = \alpha_i + \theta Y_{it-h} + \lambda_t + \delta D_{it} + X'_{it}\beta + \varepsilon_{it} \quad (1)$$

Three-panel data regression analysis to test empirically three hypotheses as proposed above:

$$FDI\ inflow_{it} = \beta_0 + \beta_1 EODB_{iy} + \beta_3 FDI_{t-1} + \beta_4 Exchange\ rate_{it} + \beta_4 GDP\ growth_{it} + \epsilon \ldots. \quad (2)$$

$$FDI\ inflow_{it} = \beta_0 + \beta_1\ FDI_{t-1} + \beta_2 EATR_{iy} + \beta_3 Size\ of\ government_{it} + \beta_4 Exchange\ rate_{it} + \beta_5 GDP\ growth_{it} + \beta_6 Export_{it} + \beta_7 Import_{it} + \epsilon \ \ldots. \quad (3)$$

$$FDI\ inflow_{it} = \beta_0 + \beta_1\ FDI_{t-1} + \beta_2 veto\ player_{iy} + \beta_3 Exchange\ rate_{it} + \beta_4 GDP\ growth_{it} + \beta_5 Export_{it} + \beta_6 Import_{it} + \epsilon \quad (4)$$

Based on the theoretical hypothesis, this study proposes several statistical hypotheses. First, EODB is positively associated with FDI inflow. Second, exchange rate and GDP growth are also positively associated with FDI inflow. Third, EATR and size of government are negatively associated with FDI inflow and lastly, veto player is negatively associated with FDI inflow.

Fixed Effect (FE) model estimation

Following Wooldridge (2001), this study utilizes the Fixed effect model to explore the relationship between predictor and outcome variables within an entity. Fixed effect model estimation suggested by Wooldridge (2001) following this equation as follows:

$$Y_{it} = X_{it}\beta + c_i + u_{it} \quad t = 1, \ldots t \quad (5)$$

Where X_{it} is 1xk and can contain observable variables that change across t but not j variables, variables that change across i but not t, and variables that change across it and t. Furthermore, each entity has unique properties that might influence or not influence the predictor variables. When employing FE estimation, this study implies that anything within the individual may influence or bias the predictor or outcome variables, which must be controlled for. FE estimation eliminates the effect of time-invariant traits, allowing us to analyze the net effect of the predictors on the outcome variable.

Random Effect (RE) model estimation

Model of random effect Estimates The model is shown below (Wooldridge, 2001):

$$C_{it} = \beta_{1i} + \beta_2 Q_{it} + \beta_3 PF_{it} + \beta_4 LF_{it} + u_{it} \quad (6)$$

Instead of treating it as a fixed variable, we suppose it is a random variable with a mean value of. That is to say,

$$\beta_{1i} = \beta_1 + \epsilon_i$$

As a result, equation (1) can be expressed as the random-effect model shown below:

$$C_{it} = \beta_1 + \beta_2 Q_{it} + \beta_3 PF_{it} + \beta_4 LF_{it} + w_{it} \quad (7)$$

Where:

The composite error term consists of two components, which are the cross-section error component, and the combined time series and cross-section error component and it varies over cross-section as well as time. In the random-effect model, the common intercept ( ) represents the mean value of all the cross-sectional intercepts, and the error component represents the random deviation of individual intercepts from this mean value. We use the Hausman test to choose between FE and RE models, with the null hypothesis being the random effect model and we hypothesize to reject the null hypothesis.

3. Results

3.1. Descriptive analysis

In this part, we present a basic description of each variable, including several indicators observation, mean, standard deviation, minimum, and maximum as below:

Table 2 Descriptive Output

Variable	Observation	Mean	Std. deviation	Min	Max
Countries	110	5.5	2.8854	1	10
Year	110	2015	3.1768	2010	2020
Country code	0				
Economy	0				
Political system	0				
FDI Inflow	110	6.3208	6.7221	-1.3205	29.43765
EODB	110	63.3	13.5	40.4	89
FDI_{t-1}	110	6.1453	6.3259	-1.3205	28.5981
XR	110	4707.099	6943.784	1.2495	23050.24
VP	110	1.6591	1.4435	0	4.3333
EATR	110	17.13909	8.3095	0	33.7
Size_gov	110	12.5356	5.3638	4.8067	26.4772
Exp	110	64.3405	46.4589	0.0995	203.3277
Imp	110	60.4314	38.9996	0.1009	175.7709
GDP_gr	110	4.6743	3.4678	-9.4787	14.5256

Source: Stata Output (2023)

3.2. Cross tabulation

There are three cross-tabulations, this study depicts: first is the cross-tabulation of ten economies and political systems. As the table depicts, 10 economies including Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand, Myanmar, and Vietnam. The political system is divided into three categories: assembly-elected president, parliamentary, and presidential system. These categories are based on how the country elects its political leaders. Table 3 is the output of the first cross-tabulation:

Table 3 First Cross Tabulation

Economy	Political system			Total
	Assembly	Parliamentary	Presidential	
Brunei	0	0	11	11
Cambodia	0	11	0	11
Indonesia	0	0	11	11
Lao PDR	11	0	0	11
Malaysia	0	11	0	11
Myanmar	0	0	11	11
Philippines	0	0	11	11
Singapore	0	11	0	11
Thailand	0	11	0	11
Vietnam	11	0	0	11

Source: Stata Output (2023)

According to Table 1 first cross-tabulation, two countries elect their leaders by assembly – Lao PDR and Vietnam, and there are four countries belonging to the parliamentary namely Cambodia, Malaysia, Singapore, and Thailand. Countries employ a presidential system some examples are Brunei Darussalam, Indonesia, Myanmar, and the Philippines.

The second cross-tabulation illustrates the relationship between the political system and the veto player consisting of checks and balances and stability. Veto player is a categorical variable ranging from 0, which means low veto player, to 4.33 means highest veto player. Table 4 is the second cross-tabulation:

Table 4 Second Cross Tabulation

Political system	Veto player	Total

	0	1	1.33	1.50	3	3.33	4	4.33	
Assembly elected President	0	22	0	0	0	0	0	0	22
Parliamentary	24	0	0	9	0	0	10	1	44
Presidential	0	13	9	0	10	1	10	1	44

Source: Stata Output (2023)

The third cross-tabulation depicted by Table 5, indicates the relationship between ten economies and veto players as below:

Table 5 Third Cross Tabulation

Economy									Total
	0	1	1.33	1.5	3	3.33	4	4.33	
Brunei	0	11	0	0	0	0	0	0	11
Cambodia	11	0	0	0	0	0	0	0	11
Indonesia	0	0	0	0	10	1	0	0	11
Lao PDR	0	11	0	0	0	0	0	0	11
Malaysia	0	0	0	0	0	0	10	1	11
Myanmar	0	2	9	0	0	0	0	0	11
Philippines	0	0	0	0	0	0	10	1	11
Singapore	11	0	0	0	0	0	0	0	11
Thailand	2	0	0	9	0	0	0	0	11
Vietnam	0	11	0	0	0	0	0	0	11

Source: Stata Output (2023)

There are two countries with the lowest veto players including Singapore with Cambodia and Brunei, Lao PDR, zero veto players. and Vietnam are categorized into one group with only one veto player. Besides the five countries we mention before, Indonesia, Malaysia, Philippines, Thailand, and Myanmar are countries with veto players ranging from 2 to 4.33.

Parts three, four, and five of the results report the panel data regression of each regression 1, 2, and 3. Here are the three regressions:

$$FDI\ inflow_{it} = \beta_0 + \beta_1 EODB_{iy} + \beta_3 FDI_{t-1} + \beta_4 GDP\ growth_{it} + \beta_5 Export_{it} + \beta_6 Import_{it} + \epsilon$$

$$FDI\ inflow_{it} = \beta_0 + \beta_1 EATR_{iy} + \beta_2 Size\_govt_{it} + \beta_3 Exchange\ rate_{it} + \beta_5 GDP\ growth_{it} + \beta_6 Export_{it} + \beta_7 Import_{it} + \epsilon$$

$$FDI\ inflow_{it} = \beta_0 + \beta_1 veto\ player_{iy} + \beta_2 Exchange\ rate_{it} + \beta_3 GDP\ growth_{it} + \beta_4 Export_{it} + \beta_5 Import_{it} + \epsilon$$

3.3. Effect of investment climate reform on FDI Inflows

This article presents findings for the effect of investment climate reform on FDI inflow by presenting this table that combines all regression with fixed effect and random effect estimation as output stata indicate and highlights also Hausman test for the decision to choose FE or RE model.

Table 6 Effect of investment climate reform on FDI Inflow

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		
EODB	0.00573702	0.03577315*
FDI_{t-1}	0.37080951***	0.9810241***
XR	-0.00005866	-0.0000262
GDP_gr	0.0615501	0.16833044**
Constant	3.6674634	-2.6349316*

N	110	110
R^2	0.15223051	
Adj R^2	0.03742839	

* p<0.05; ** p<0.01; *** p<0.001

Source: Stata Output (2023)

The above table indicates results that one drawn inferences as follows: First, based on the fixed effect estimation, only the FDI inflow of percentage GDP previous year affect the FDI inflow. other variables including ease of doing business, exchange rate, and annual GDP growth does not affect the FDI inflow. Moreover, the constant of FE estimation is also insignificant

Second, the finding indicates that 1 percent changes in FDI inflow will affect 0.37 percent of annual GDP growth ceteris paribus and 15 percent variation in FDI inflow can be explained by the first model. Lastly, based on the random effect estimation, three variables have an impact on FDI inflow including ease of doing business (significant 95%), previous FDI inflow (significant 99%), and annual GDP growth rate (significant 90%). This part also provides a report of the Hausmann test as decision criteria to choose fixed effect estimation or random effect estimation, as follows:

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+------------------------------------------------------------
          X1 |    .005737     .0357732      -.0300361        .0654916
          X2 |   .3708095     .9810241      -.6102146        .0858066
          X3 |  -.0000587    -.0000262      -.0000325        .0002411
          X9 |   .0615501     .1683304      -.1067803        .0296756
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       52.30
                Prob>chi2 =      0.0000
```

Source: Stata Output (2023)

Null hypothesis: the estimators of random-effect models *do not* significant. The test statistic of 52.30 is highly statistically significant, so we reject the random-effect model in favor of the fixed-effect model. Therefore, only the FDI inflow of percentage GDP the previous year affects the FDI inflow. R^2 measure of 15 percent variation independent variable can explain FDI inflow. Besides the above regression as reported in Table 6, we also highlight the finding of another regression after adding control variables, export and import of goods and services as a percentage of GDP as follows

Table 7: Effect of investment climate reform on FDI inflow with control variables

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		
EoDB	0.01318907	-0.01550304
FDI_{t-1}	0.36167649***	0.86272368***
XR	3.116e-07	-0.00004221
GDP_gr	0.0835781	0.13477632*

Variable	Fixed estimates	Random estimates
Exp	-0.02843763	0.02133138
Imp	-0.00868882	0.00678371
Constant	5.2262843	-0.21367342
N	110	110
R^2	0.17298366	
Adj R^2	0.04101297	

* p<0.05; ** p<0.01; *** p<0.001

Source: Stata Output (2023)

3.4. Effect of Tax Policy and Size of Government on FDI Inflows as a Percentage of GDP

Our finding reports the effect of tax policy by proxy of effective average tax rate and size of government on the FDI inflow. The table below is presenting a combination of all regression with fixed effect and random effect estimation as the output of stata indicates. Moreover, the finding highlights the Hausman test for decision criteria to choose either FE estimates or RE estimates model.

Table 8: Effect of tax policy and size of government on FDI Inflow

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		
FDI_{t-1}	0.36957114***	0.90390575***
XR	-0.00005245	-0.00008757*
GDP_gr	0.06319562	0.17146411**
EATR	0.00299175	-0.09512347**
Size_gov	0.06560028	-0.10720434
Constant	3.1275376	3.3509471*
N	110	110
R^2	0.15519984	
Adj R^2	0.03070297	

* p<0.05; ** p<0.01; *** p<0.001

Source: Stata Output (2023)

Based on the second regression equation, several results are reported as follows: first, fixed effect estimation indicates that only FDI inflow as a percentage of GDP previous year affects the FDI inflow with 99 percent significance and the constant of this estimation is insignificant. Moreover, it estimates that 1 percent change in FDI inflow will have an effect of 0.37 percent of annual GDP growth ceteris paribus. Our second main interest for effective average tax rate and size of government can not be predictors for determining FDI inflow. The result indicates both variables are not statistically significant. Therefore, our study cannot provide robust empirical evidence. Tax rate and size of government give indication two folds: one is an important aspect of the public sector within an economy. Two is the proposed "race to bottom" hypothesis does not find any statistical support.

Besides this, the finding also indicates that 5 percent variation in FDI inflow can be explained by a combination of previous FDI inflow, exchange rate, annual GDP growth, EATR, and size of government. Lastly, random effect estimation indicates that FDI inflow previous year, exchange rate, EATR, and annual growth rate of GDP affect FDI inflow. Our study reports the decision to choose fixed effect estimation or random effect estimation, based on the Hausmann test as follows:

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
X2	.3695711	.9039057	-.5343346	.0809022
X3	-.0000524	-.0000876	.0000351	.0002132
X5	.0029918	-.0951235	.0981152	.0799499
X6	.0656003	-.1072043	.1728046	.1308512
X9	.0631956	.1714641	-.1082685	.0250066

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 46.49
Prob>chi2 = 0.0000

Source: Stata Output (2023)

Null hypothesis: the estimators of random-effect models are not significant. The test statistic of 46.49 is highly statistically significant, so we reject the random-effect model in favor of the fixed-effect model. Besides the regression above, we also highlight the finding of another regression after adding control variables, export and import of goods and services as a percentage of GDP as follows:

Table 9 Effect of tax policy and size of government on FDI Inflow with control variables

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		
FDI_{t-1}	0.35698611***	0.83258015***
XR	0.00001911	-0.00008235*
GDP_gr	0.01455527	-0.06058059
EATR	0.11792999	-0.09079749
Size_gov	0.08577041	0.15694599*
Exp	-0.01709558	0.00896012
Imp	-0.02327135	0.00995784
Constant	4.4146065	1.8566152
N	110	110
R^2	0.17870248	
Adj R^2	0.03740398	

* p<0.05; ** p<0.01; *** p<0.001

Source: Stata Output (2023)

3.5. Effect of Political Institutions on FDI Inflows as a Percentage of GDP

This study reports the effect of political institution factors by proxy of veto players on FDI inflow by presenting this table combining all regression with fixed effect and random effect estimation as output stata indicate and highlight also Hausman test for the decision to choose FE or RE model.

Table 10: Effect of a political institution on FDI Inflow

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		
FDI_{t-1}	0.37094576***	0.98539442***

XR	-0.00004907	-0.00003875
GDP_gr	0.06171979	0.12929217*
VP	0.09667217	-0.15607709
Constant	3.8233052	0.102252
N	110	110
R^2	0.15228039	
Adj R^2	0.03748503	

* p<0.05; ** p<0.01; *** p<0.001

Source: Stata Output (2023)

Based on the regression equation, several results are reported as follows: one is fixed effect estimation indicates that only FDI inflow as a percentage of GDP previous year affects the FDI inflow with 99 percent significance and the constant of this estimation is insignificant. Moreover, 1 percent changes in FDI inflow will affect 0.37 percent of annual GDP growth ceteris paribus.

Two is estimation indicates that 15 percent variation of FDI inflow can be explained by a combination of previous FDI inflow, exchange rate, annual GDP growth, and veto player. However, this study cannot find statistical support for the veto player effect on FDI inflow. Random effect estimation indicates that the FDI inflow previous year and the annual growth rate of GDP affect FDI inflow. This study also reports the decision to choose a fixed effect or random effect estimation, based on the Hausmann test as follows:

```
                 ——— Coefficients ———
                   (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                  fixed        random       Difference          S.E.
——————————————————————————————————————————————————————————————————————————
          X2     .3709458     .9853944      -.6144487        .0838527
          X3    -.0000491    -.0000387      -.0000103        .0002094
          X4     .0966722    -.1560771       .2527493        .8355921
          X9     .0617198     .1292922      -.0675724        .0327415
——————————————————————————————————————————————————————————————————————————

                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       58.33
                Prob>chi2 =      0.0000
```

Source: Stata Output (2023)

Null hypothesis: the estimators of random-effect models are not significant. The test statistic of 58.33 is highly statistically significant, so we reject the random-effect model in favor of the fixed-effect model.

Based on the above regression, we try to find evidence about the effect of political institutions on the FDI Inflows. There are several findings to present and discuss as follows: first, political institution proxy by veto player *does not* affect FDI inflow. Second, previous FDI inflow does affect FDI inflow. To find out both controlling variable export and import goods and service as a percentage of GDP effect on the FDI inflow, besides the third regression, we also highlight the finding of another regression after adding control variables, export and import of goods and services as a percentage of GDP as follows:

Table 11 Effect of a political institution on FDI Inflow with control variables

Variable	Fixed estimates	Random estimates
Y (FDI inflow as dependent variable)		

FDI_{t-1}	0.36109476***	0.8503484***
XR	0.00002379	-0.00004533
GDP_gr	0.08219681	0.14449989*
VP	0.09163619	-0.18878117
Exp	-0.03052697	0.01516972
Imp	-0.00601714	0.00876136
Constant	5.781289*	-0.55918001
N	110	110
R^2	0.17279519	
Adj R^2	0.04079442	

* p<0.05; ** p<0.01; *** p<0.001
Source: Stata Output (2023)

4. Discussion

4.1. General Discussion

It is important to provide intensive discussion about empirical results. It begins with the basic observation that contrary to the study of Mottaleb and Kalirajan (2010), our study finds that the EODB score *does not* affect FDI inflow by controlling other variables constant, *ceteris paribus*. One explanation why this is not the case is because FDI inflow is most likely related to the timing of reform and size economy and the level of economic development ranging from most developed up to newly establish economy. Therefore, variation of sample and time observation most likely produce the possible explanation for why our result of EODB score does not affect the FDI inflow.

Built upon Indonesia's case of climate reform, Iksan (2020) contested during the Jokowi Administration, Indonesia's standing among the 190 nations in the World Bank's Ease of Doing Business rankings increased; nevertheless, the government of Indonesia appears to have overlooked this signal while using the AT Kearney Foreign Direct Investment Confidence Index. Moreover, after suffering from the devastating impact of the Asian Financial Crisis, Southeast Asia's investment figures changed how the global capital market interacted with its domestic environment.

Future researchers are suggested to use more detail of ease of doing business, for instance, days required to start a business, and days to require and pay tax (Mottaleb and Kaliraja, 2010; Bayraktar 2013). It is also interesting to compare various countries from different regions as this study operates in Southeast Asian countries. Mottaleb and Kalirajan for example compare the determinant of FDI in developing countries and divides them into low-middle-income countries, and middle-high-income countries. As suggested by Bayraktar, our future study may focus on emerging economies like Brazil, Russia, India, China, and South Africa as the sample of the study. There are several indicators that he argued show rapidly improving, such as starting a business, closing a business, and protecting investors. Therefore, our study presents the case of Japanese experiences to provide a satisfactory explanation of the topic related to the political factor (veto player) and economic factors (EODB, EATR, and size of government) to explain the variation of FDI.

This study also finds different results of the race to the bottom hypothesis, as proposed by Jensen (2006) and Devereux and Griffith (2003). Our results cannot provide statistical evidence that the effective average tax rate affects the FDI inflow, but we can provide statistical evidence that the previous FDI inflow is the best predictor of the FDI inflow. Our time frame 2010-2020 provides insight into the year 2010 experienced Global Financial Crisis. Therefore, the size of the government played an important role in providing backup and acted as a lender of last resort in the case of the Central Bank.

However, our study corroborates a previous study by MacIntyre (2001) argued that there is a negative relationship between veto players and FDI inflow. However, our study differs from MacIntyre who focuses his attention on Asia Financial Crisis 1997/1998. His research attempt to utilize a political framework in explaining

the relationship between economic crisis and investor preference. On top of that, the previous study was based on a qualitative assessment, and our study is performing a quantitative assessment. Thus, the study also should take with a grain of salt, that investor is more preferable to countries with more stable and smaller veto players rather than bigger veto players. Literature in comparative economic development suggests that a better stable government and more diverged veto players will ensure the power does not accumulate in one or several strong players, and it is better for development in the long run.

4.2. A Case of Japan's Experience

In 2020, USD 39 trillion flowed into Japan as an FDI inflow, which marked a higher number and was reached earlier than the target of *Japan is Back* plan, the 2013 Government's promotion plan for FDI inflow, which targeted USD 35 trillion until 2030. And the Japanese Government announced another, more ambitious target of USD 80 trillion, or 12% of its GDP, until 2030. However, the way to reach the target would be tougher for the Japanese economy, as the share of FDI inflow in GDP in 2020 was just 1.2%, which is far below its 2030 target of 12%.

Historically, Japan has suffered its lower position as a less attractive destination for FDI inflow for these 30 years since its bubble economy collapsed in the early 1990s until current the 2020s. According to UNCTAD's latest data, Japan's FDI net inflow share in GDP was the lowest level among the 38 OECD countries in 2021. Moreover, World Bank reported Japan's EODB ranking positioned the 29th, in 2020, which has been unchanged since 2015. The tendency shows a downgrade of Japanese presence in the East Asian economy, while South Korea and China had upgraded their rankings in the EoDB. And JETRO's data shows the most difficult issue foreign firms faced in Japan was scarce human resources.

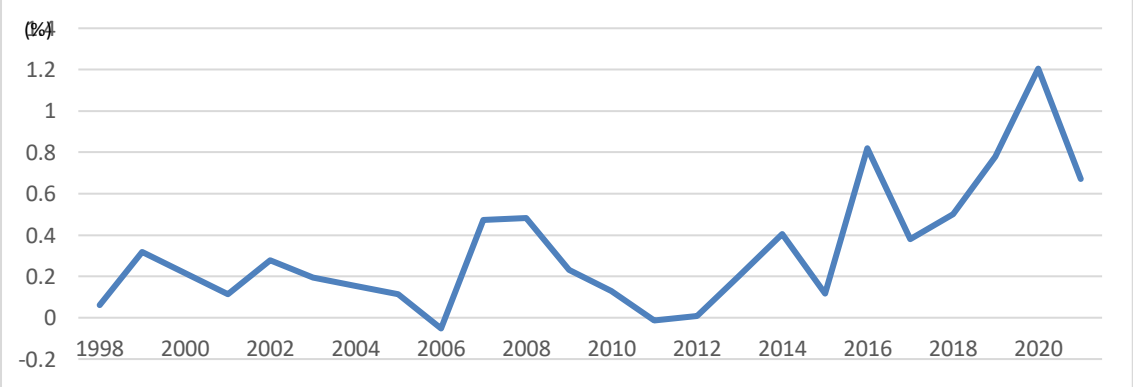

Figure 2: Japan FDI inflow as a percentage of GDP (1998-2021)
Source: World Economic Indicators (2023)

In the overlapping period, Figure 3 depicts exchange rates Yen Japanese to US Dollar. Over time, Yen Japan was experiencing fluctuation over USD dollars. Exchange rate depreciation is positive news for an export-led country like Japan. While importers of Japanese must cope with the positive news. Bank of Japan must maintain a foreign exchange equilibrium that benefits both exporters and importers as well.

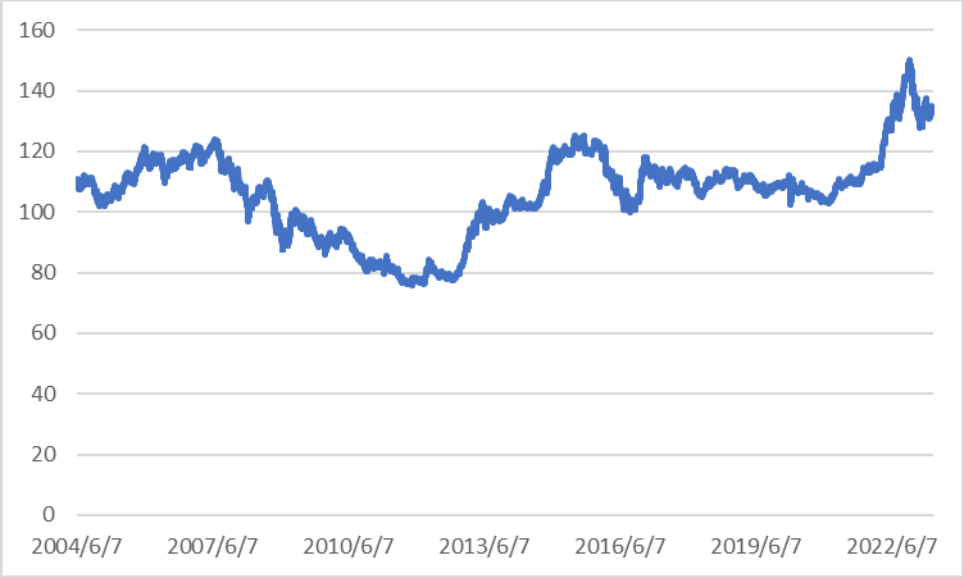

Figure 3: Exchange rate JPY/USD (2004-2022).
Source: Mizuho historical data (2023)

By providing Japan's case over the exchange rate and FDI inflow, our description is intended to give a fuller illustration for general readers and illustrates a better real economy. It is aimed at providing a supporting narrative argument complementing the statistical assessment over the theme of determinant FDI, and political and economic factors. Eventually, attracting FDI has to be built upon continuous reform and strengthening the cause of sustaining the growth of a country in the long run.

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