Cross-Country Econometric Study on the Impact of Fiscal Incentives on Foreign Direct Investment

Ma. Laarni D. Revilla

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PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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Abstract

The increasing level of competition for foreign direct investment (FDI) in the '90s triggered many countries to offer various fiscal incentives. Specifically, many Asian countries persistently keep their tax rates competitive. To empirically investigate the relationship between the two variables, this paper examines the impact of fiscal incentives on FDI using panel data from 1996 to 2012 for 5 ASEAN countries. The analysis utilized 5 panel data regression models, of which 2 are fixed-effects models and the remaining 3 are random effects models. The results show that tax rate is negatively related to FDI. Another finding reveals the importance of infrastructure in increasing FDI. However, there is no significant link between governance indicators and FDI. To prevent a "race-to-the bottom" effect on tax rates, the study recommends closer coordination between ASEAN countries in determining the optimal size and scope of these tax rates and other investment incentives. Additionally, focus on other country-specific factors affecting FDI flows such as infrastructure, income, and population is encouraged.

Cross-country Econometric Study on the Impact of Fiscal Incentives on FDI

Introduction

The increasing level of competition for foreign direct investment (FDI) in the 1990s triggered many countries to offer fiscal incentives which include tax holidays, import duty exemptions, investment allowances, and accelerated depreciation (Morisset & Pirnia, 2000). Fiscal incentives or tax incentives are defined as any tax provision granted to a qualified investment project that represents a favorable deviation from the provisions applicable to investment projects in general. Thus, the key feature of a tax incentive is that it applies only to certain projects (Fletcher, 2002). These tax incentives are especially crucial for mobile firms or firms operating in many markets such as banks, insurance companies, internet-related business, and export-oriented companies because they can better take advantage of different tax regimes across countries (Madiès & Dethier, 2010).

In recent years, tax incentives have become an important factor in determining FDI location. Asian countries, particularly China, Korea, Taiwan, Hong Kong, and Japan, are persistent in keeping their tax rates competitive (Madiès & Dethier, 2010). This trend makes it interesting to examine whether these investment incentives indeed entice companies to invest in those host countries.

Literature Review

Several positive effects of fiscal incentives have been noted. Those who support fiscal incentives as a determinant of FDI argue that such scheme can increase investment which may then lead to job creation and positive externalities or spillovers (Madiès & Dethier, 2010). Sebastian (2009) added that investment incentives may provide higher revenues from the possible increase in investment from other countries, and social benefits that include jobs, positive externalities, and signaling effects. However, a study by Blomström & Kokko (2003) suggest that the use of investment incentives to attract foreign firms may not be socially optimal. This is because the spillovers of foreign technology and skills to local industry does not come automatically. The spillover benefits depend on the overall capacity of local firms to absorb foreign technologies and new skills. Thus, there is also a need to strengthen the capability of local firms to fully realize the spillover benefits of FDI.

Some authors point out that, compared to fiscal incentives, strategies such as improving human and physical infrastructure are still more effective in attracting long-term investment. However, if the countries are more or less similar in economic and political structure, then the

differences in taxes may have significant effects on the investors' decisions (Morisset & Pirnia, 2000).

Other studies reveal, however, that fiscal incentives may also have negative impacts. Madiès & Dethier (2010) noted that there are several arguments against tax incentives. One is that such regime is costly to administer and could decrease fiscal revenue. Another is that it is prone to corruption and rent-seeking. Such illicit behavior are particularly observed in developing countries that have strict budgetary constraints. Also, intense competition and bidding war may lead to countries favoring foreign firms over the welfare of local firms. Lastly, tax incentives could create economic distortions as firms try to move as many transactions as possible to the sector with the lowest taxation or build new firms just before existing tax preferences expire.

According to Sebastian (2009), potential costs of investment incentive policies are revenue losses from investments that would have been made even without the incentives, and other indirect costs such as economic distortions and administrative costs.

In developing countries, the effects of fiscal incentives on FDI location vary. Using a sample of 427 individual observations, de Mooij & Ederveen (2008) revealed that a 1 percentage-point increase in a tax measure in a certain location leads to a 3.3% reduction in foreign investment (thus, semi-elasticity of FDI to tax rates equals -3.3).

The study of Bénassy-Quéré, Fontagné & Lahrèche-Révil (2006) included data on FDI flows from 1984-2000 for 11 OECD countries. They found out that tax differentials play an important role in understanding foreign location decisions. The impact, however, is not proportional. This is because low tax rates do not translate to higher FDI, while high taxes tend to decrease new FDI inflows.

Moreover, Banga (2003) examined the impact of fiscal incentives and investment agreements with developed and developing countries on FDI inflows to developing countries from 1986 to 1997. The results showed that, after controlling for the effect of economic fundamentals (i.e., market size, labor cost, education, etc.) of the host countries, lower taxes attract FDI from developing countries, but not from developed countries. Additionally, bilateral investment treaties (BITs) with developed countries appeared to have a strong and significant effect on FDI, while the opposite is true in the case of BITs with developing countries. All these results suggest that FDI determinants may be region-specific.

Cleeve (2008) analyzed the impact of fiscal incentives on FDI to Sub-Saharan Africa (SSA). Panel data on 16 Sub-Saharan African countries from 1990 to 2000 were utilized. The results of the regression revealed that both government policies and tax holidays attract

investment. Other fiscal incentives, however, have no significant effect. Political and economic stability are still more important than such incentives.

Harding & Smarzynska Javorcik (2007) observed the impact of investment promotion agencies (IPA) on FDI inflows using data from 109 countries for the years 1972-2005. Investment promotion leads to an increase in FDI inflows to developing countries. The study also presented evidence of diversion of FDI to other neighboring countries due to investment incentives.

Sebastian (2009) explored whether incentives foster investment in developing countries. Econometric analysis showed that investment climate is a crucial factor in boosting FDI. The positive effect of lowering tax rates is eight times stronger for countries with favorable investment climates. Investment climate, thus, limits the effect of incentives on FDI. The author also emphasized the need to measure and monitor the costs of these incentives, and to encourage regional cooperation to avoid harmful tax competition.

Wells & Allen (2001) pointed out that in the case of Indonesia in 1984, tax holidays do not influence foreign investments. Inflows of foreign investment continued to increase at a high rate even without tax holidays.

According to UNCTAD (2000), it is common for developing countries to offer foreign investors significant fiscal incentives in order to encourage FDI and eventually stimulate local economic growth. Some of these fiscal incentives include lengthy tax holidays, expensing or other generous tax treatment of new investment expenditures and other tax reductions as well as providing roads, worker training, and other public inputs at below market prices. Tax incentives help stimulate foreign investment effectively and efficiently. In general, developing countries grant tax incentives to investments related to manufacture, exploration and extraction of mineral reserves, promotion of export, and the tourism and leisure sectors. These countries usually do not have incentives aimed at the headquarters of companies and service sectors, except for Malaysia, Singapore, and the Philippines, which employ reduced corporate tax rates to attract company headquarters.

Morisset & Pirnia (2000) concluded that early econometric studies generally reveal that the effect of tax policy on FDI is rather limited, at least compared to other factors such as political stability, the costs and availability of labor and basic infrastructure.

In the Philippines, the history of granting fiscal incentives dates as far back as 1946, when tax exemptions were given to "new and necessary" industries for a period of four years. In the 1950s and 1960s, incentives on the importation of raw materials and inputs were implemented. Moreover, it is with the enactment of the Investment Incentive Act in 1967 that the investment incentive system was institutionalized. The amendments that followed, including the

1970 Export Incentives Act, Batas Pambansa 391 (BP 391) in 1983, and the 1987 Omnibus Investment Code, focused on directing investment to "desirable" sectors that support exports and generate employment (Medalla, 2002).

Manasan (2002) mentioned that the most important kinds of fiscal incentives are those in the form of income tax holiday and exemption from import duties. Export enterprises, for instance, are exempted from customs duties and sales taxes on inputs. Additional deductions for labor costs and tax credits for using domestic raw materials are also provided.

Since policymakers agree that FDI plays a crucial role in economic growth, the design and aim of fiscal incentives, in recent years, focused more on attracting investments.

In terms of the role of fiscal incentives in attracting FDI, international empirical evidence suggest that incentives have varying and contradicting effects on investors' decision-making. In the developing country context, incentives can matter, especially for export industries. Note, however, that fundamental economic conditions, such as infrastructure, general business environment, human resources, etc., are still important considerations to investors (Chalk, 2001).

Moreover, UNCTAD (2000) added that compared to other economic factors, it is relatively easier for governments to control and change the range and extent of tax incentives to influence the location decision of investors. Thus, investment experts consider incentives as important policy tool in attracting FDI for economic development.

The advantages and disadvantages of fiscal incentives have been discussed in several earlier studies.

One study explained that FDI involves not only the entry of capital but also the internal utilization of intangible assets such as technology and managerial expertise that are specific to a given firm. If this transfer of technology, managerial expertise, skills and other intangible assets from one country to another are completely internalized, the rate of return will fully capture the net benefits of an investment (UNCTAD, 2000).

Medalla (2002) noted that fiscal incentives do not induce more investment per se but channel investments to desirable sectors. As for FDI, fiscal incentives can theoretically raise total investment by attracting foreign investors. However, evidence have shown that fiscal incentives do not significantly affect the level of FDI in the country. A healthy overall economic status of a country is still the more important determinant of FDI.

Furthermore, in the Philippines, there is a disagreement on whether the benefits of fiscal incentives outweigh the costs in terms of forgone revenue (Chalk, 2001). Medalla (2002) attempted to estimate the losses in total revenues due to fiscal incentives. It is important to

remember that fiscal incentives, since they are privileges given to investors, bring about losses in income. The estimates of forgone income, based on Medalla's set of assumptions and computations, range from Php 7.2 billion to Php 12.5 billion. Medalla emphasized that there is a need to be aware of these high costs and be careful in granting incentives.

According to Reside (2006), many of the incentives given out by the Board of Incentives (BOI) are redundant, meaning investors would have still chosen to invest even without the subsidies. For this reason, the expected benefits from fiscal incentives, such as spurring investments and targeting the needed investors, cannot be attributed to these incentives. Also, the forgone revenues from redundant incentives, approximately Php 43.2 billion (1% of GDP) in 2004, serve as costs to the government.

Also, investors themselves claim that they do not make decisions based on incentives alone. For the most part, the investment decisions have already been made by the time incentives are taken into consideration.

Chalk (2001) emphasized that the lack of available information on the relationship between fiscal incentives and FDI is indeed an important issue. One way to address this is to prepare and present annual reports that show the benefits generated by foreign investment projects (i.e., level of employment generated, amount of investment on infrastructure, net exports, etc.). Another way is to determine the primary attractions for investment in the Philippines. Surveys may be conducted in order to pinpoint the strategies and considerations of corporations when choosing an investment location. This will help the country identify what factors (i.e., general tax regime, level of tax incentives, infrastructure, available human capital, etc.) truly matter to investors and therefore further improve on them.

Next, there is a need to reform the administration of fiscal incentives in the country. Since the selection of firms qualifying for incentives is decided by several committees, including the BOI, NEDA, DOF, and Department of Agriculture, the process of granting incentives may be subject to lobbying and political pressure.

Lastly, the "race-to-the-bottom" effect of the tax competition in the region undermined the Philippines' budget. There is thus a need for the countries in the ASEAN to coordinate in order to limit the size and scope of investment incentives. This will protect countries from the harmful effects of tax competition on their own budget.

Given all the studies mentioned above, there is a need to review the current relationship between FDI and fiscal incentives in the Philippines and in the Southeast Asian region using the most recent data available.

Data and Methodology

Data

The regression analyses of previous studies on the determinants of FDI consider variables that represent the different sectors of the economy. Such variables represent the country's market attractiveness (GDP per person employed), tax levels (Effective Average Tax Rate [EATR]), population (population growth), infrastructure (air transport and mobile cellular subscriptions), investment climate (import value index, export value index, inflation, time required to start a business, and real interest rate), and governance (control of corruption, regulatory quality, and rule of law). All the data, except the EATR, were gathered from the World Bank Database. Each variable is described in detail below:

Foreign direct investment, net inflows (BoP, current US$). These are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. The data represent net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors.

Gross Domestic Product (GDP) per person employed (constant 1990 PPP $). GDP per person employed, which is GDP divided by total employment in the economy, is the independent variable that represents the attractiveness of the market. Purchasing power parity (PPP) GDP is GDP converted to 1990 constant international dollars using PPP rates. An international dollar has the same purchasing power over GDP that a U.S. dollar has in the United States.

Effective Average Tax Rate (EATR). EATR is the tax variable in the regression. Effective tax rate   in a country depends on complex interactions between statutory rates, depreciation regimes, loss-carry forward provisions, inflation, and other variables (Fletcher, 2002). It is defined as the percentage reduction in the financial rate of return on an investment that is due to the fiscal system of the host country (Morisset & Pirnia, 2000).

Population growth (annual %). Population growth (annual %) serves as the population variable in the model. This is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage.

Air transport, registered carrier departures worldwide. Registered carrier departures worldwide are domestic takeoffs and takeoffs abroad of air carriers registered in the country.

Mobile cellular subscriptions (per 100 people). Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service using cellular technology, which provide access to the public switched telephone network. Post-paid and prepaid subscriptions are included.

Import value index (2000 = 100). Import value indexes are the current value of imports (c.i.f.) converted to U.S. dollars and expressed as a percentage of the average for the base period (2000).

Export value index (2000 = 100). Export values are the current value of exports (f.o.b.) converted to U.S. dollars and expressed as a percentage of the average for the base period (2000).

Inflation, GDP deflator (annual %). Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.

Time required to start a business (days). Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business. If a procedure can be speeded up at additional cost, the fastest procedure, independent of cost, is chosen.

Real interest rate (%). Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator.

Control of Corruption (ranges from approximately -2.5 [weak] to 2.5 [strong] governance performance). Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Regulatory Quality (ranges from approximately -2.5 [weak] to 2.5 [strong] governance performance). Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of Law (ranges from approximately -2.5 [weak] to 2.5 [strong] governance performance). Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Methodology

In order to determine the relationship between the dependent variable (FDI) and the explanatory variables mentioned above, panel data regressions were conducted. The different regressions included data from 1996 to 2012 for 5 Southeast Asian countries, namely Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

Panel data, also known as longitudinal or cross-sectional time-series data, is defined as a dataset in which the behavior of entities are observed across time (Torres-Reyna, 2007). In this study, these entities are the countries mentioned earlier.

Two models may be used in panel data regression. First, the Fixed Effects (FE) Model is applied when you are in analyzing the impact of variables that vary over time. FE explore the relationship between predictor and outcome variables within an entity (country, person, company, etc.). When using FE we assume that something within the individual may impact or bias the predictor or outcome variables and we need to control for this. Another important assumption of the FE model is that those time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics.

On the other hand, in the Random Effects (RE) Model, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. In the RE model, the differences across entities have some influence on the dependent variable. RE also assume that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables. The Hausman test is conducted to determine which statistical model should be used (Torres-Reyna, 2007).

To analyze the relationships among the variables, five panel data regression models were used in this study:

$$FDI = \alpha \text{ GDPperEmployed} + \beta_0 \text{ EATR} + \beta_1 \text{ AirTransport} + \beta_2 \text{ CellSubscription} + \beta_3 \text{ ImportValue} + \beta_4 \text{ RealInterest} + \beta_5 \text{ CtrlOfCorruption} + \beta_6 \text{ RegulatoryQual} + \varepsilon \tag{1}$$

$$FDI = \alpha\ GDPperEmployed + \beta_0\ EATR + \beta_1\ AirTransport + \beta_2$$
$$CellSubscription + \beta_3\ ImportValue + \beta_4\ RealInterest + \beta_5\ CtrlOfCorruption$$
$$+ \beta_6\ RegulatoryQual + \beta_7\ RuleOfLaw + \varepsilon \qquad \qquad (2)$$

$$FDI = \alpha\ GDPperEmployed + \beta_0\ EATR + \beta_1\ PopnGrowth + \beta_2\ AirTransport$$
$$+ \beta_3\ CellSubscription + \beta_4\ ImportValue + \beta_5\ RealInterest + \beta_6\ Inflation +$$
$$\beta_7\ CtrlOfCorruption + \beta_8\ RegulatoryQual + \beta_9\ RuleOfLaw + \varepsilon$$
$$(3)$$

$$FDI = \alpha\ GDPperEmployed + \beta_0\ EATR + \beta_1\ PopnGrowth + \beta_2\ AirTransport$$
$$+ \beta_3\ CellSubscription + \beta_4\ ImportValue + \beta_5\ RealInterest + \beta_6$$
$$CtrlOfCorruption + \beta_7\ RegulatoryQual + \varepsilon \qquad \qquad (4)$$

$$FDI = \alpha\ GDPperEmployed + \beta_0\ EATR + \beta_1\ PopnGrowth + \beta_2\ AirTransport$$
$$+ \beta_3\ CellSubscription + \beta_4\ RealInterest + \beta_5\ Inflation + \beta_6\ StartBusiness +$$
$$\beta_7\ ExportValue + \beta_8\ CtrlOfCorruption + \beta_9\ RegulatoryQual + \varepsilon \qquad (5)$$

where

FDI = Foreign Direct Investment;

GDPperEmployed = GDP per person employed;

EATR = Effective Average Tax Rate;

PopnGrowth = Population growth;

AirTransport = Air transport;

CellSubscription = Mobile cellular subscriptions;

ImportValue = Import value index;

RealInterest = Real interest rate;

Inflation = Inflation;

StartBusiness = Time required to start a business;

ExportValue = Export value index;

CtrlOfCorruption = Control of corruption;

RegulatoryQual = Regulatory quality; and

RuleOfLaw = Rule of law.

The next section presents the results of the regressions and discusses their implications.

Results and Discussion

Table 1 summarizes the results of the panel data regressions, where Fixed Effects was used for Models (1) and (5), while Random Effects was applied to Models (2), (3), and (4).

Table 1. Summary of coefficients of explanatory variables for FDI (1996-2012):

		FE	RE	RE	RE	FE
Variable		(1)	(2)	(3)	(4)	(5)
GDP	GDP per employed (x7)	1117787	409952.4	192924.3	279446	1570604
	(t-/z-statistic)	2.67	1.99	0.8	1.53	2.07
	(p-value)	0.01***	0.047**	0.421	0.126	0.046**
Tax	EATR (x4)	-5.72E+08	-2.71E+08	-1.95E+08	-2.35E+08	-2.60E+09
	(t-/z-statistic)	-1.5	-3.24	-1.91	-3.1	-3.78
	(p-value)	0.14	0.001***	0.056*	0.002***	0.001***
Population	Population Growth (x12)			-1.31E+09	-1.34E+09	-2.32E+09
	(t-/z-statistic)			-1.86	-1.94	-0.77
	(p-value)			0.063*	0.053*	0.448
Infrastructure	Air Transport (x1)	23485.27	31832.04	30739.46	31570.5	6617.754
	(t-/z-statistic)	4.1	6.95	6.54	7.12	0.73
	(p-value)	0***	0***	0***	0***	0.473
	Cell Subscription (x2)	-4.20E+07	-5.05E+07	-3.47E+07	-3.90E+07	-1.42E+07
	(t-/z-statistic)	-1.84	-2.34	-1.53	-1.99	-0.47
	(p-value)	0.071*	0.019**	0.125	0.046**	0.639
Investment	Import Value (x9)	1.47E+07	2.16E+07	1.68E+07	1.70E+07	
	(t-/z-statistic)	2.61	4.69	3.19	3.47	
	(p-value)	0.012**	0***	0.001***	0.001***	
	Real Interest (x14)	-6.02E+07	-3.23E+07	-1.22E+08	-4.34E+07	-3.73E+08
	(t-/z-statistic)	-0.98	-0.52	-0.76	-0.72	-0.9
	(p-value)	0.332	0.605	0.445	0.474	0.375
	Inflation (x10)			-5.13E+07		1.99E+07
	(t-/z-statistic)			-0.54		0.06
	(p-value)			0.591		0.954

	Start Business (x18)					7.22E+07
	(t-/z-statistic)					1.95
	(p-value)					0.059*
	Export Value (x5)					5254958
	(t-/z-statistic)					0.6
	(p-value)					0.555
Governance	Control of Corruption (x3)	4.56E+09	-1.09E+09	4.72E+08	1.17E+09	6.49E+09
	(t-/z-statistic)	1.78	-0.54	0.2	0.58	1.42
	(p-value)	0.081*	0.588	0.842	0.56	0.164
	Regulatory Quality (x15)	-6.09E+08	-5.35E+08	-3.13E+08	-6.09E+08	8.46E+09
	(t-/z-statistic)	-0.25	-0.31	-0.18	-0.37	1.6
	(p-value)	0.801	0.754	0.86	0.713	0.118
	Rule of Law (x17)		4.89E+08	1.03E+09		
	(t-/z-statistic)		0.23	0.46		
	(p-value)		0.82	0.645		
Constant	constant	-4.81E+09	-4.21E+09	1.07E+09	1.14E+07	1.57E+10
	(t-/z-statistic)	-0.65	-1.96	0.31	0	1.14
	(p-value)	0.518	0.05	0.759	0.997	0.262
No. of obs		69	69	69	69	50
No. of groups		5	5	5	5	5
R-squared: within		0.7587	0.7187	0.727	0.7251	0.7807
R-squared: between		0.0912	0.95	0.9974	0.9978	0.1956
R-squared: overall		0.2121	0.7552	0.7711	0.7696	0.0156

Note: first number refers to coefficient, number below it refers to t-statistic (for FE) or

z-statistic (for RE); last number refers to p-value;

*** indicates 1% level of significance;

** indicates 5% level of significance;

* indicates 10% level of significance

The results of most of the panel data regressions revealed that GDP per employed, EATR, population growth, air transport, mobile cellular subscription, import value, and time to start business are significant in determining FDI, while real interest, inflation, export value, control of corruption, regulatory quality, and rule of law are statistically insignificant. The discussion below presents the significant and insignificant variables by category and examples of how much FDI increases or decreases given a change in the value of an explanatory variable.

For GDP, the first regression model specifically shows that a one dollar increase in GDP per person employed leads to a 1,117,787 dollar increase in FDI, ceteris paribus. This means that salary increases for employees may contribute to higher FDI.

Moreover, there is a negative relationship between EATR and FDI. According to the second regression run, a one percent increase in EATR decreases FDI by 271,000,000 dollars. Morisset and Pirnia (2000) mentioned that, in principle, the average tax rates may be relevant in the strategic decisions made by firms. Devereux and Griffith (1998), in their study on the behavior of US firms in the European Union, also discussed that the effective average tax rates seem to have a great impact on FDI location.

In terms of the size of the population, the results indicate that population growth and FDI are negatively correlated. In particular, the fourth regression model illustrates that for every one percent increase in population growth, FDI is expected to decrease by 1,340,000,000 dollars. Asiedu (2002) explained that market size is not a determinant of FDI for a developing country due to low income. Akin (2009) added that in the FDI literature, not much research has been done yet on the impact of the market size on FDI of developing countries.

Further, Aldaba (1994) pointed out that infrastructure availability impacts the attractiveness of a country to FDI. These infrastructure include roads, ports, airports, telecommunication networks and facilities, and energy. In most of the panel data regressions conducted, both air transport and mobile cellular subscription are statistically significant. The fourth model shows that an increase in registered carrier departures translates to a 31,570.50 dollars increase in FDI. Carrier departures may represent the exchange and transport of products among countries which are involved in FDI. An increase in mobile cellular subscriptions, which represents advancement in and accessibility of technology in the country, decreases FDI by 39,000,000 dollars. Technologically advanced countries, with people who can afford to enjoy such innovations, are usually the rich ones that do not receive high levels of FDI due to higher cost of labor.

Among the investment variables used, only import value and time to start business are significant. The third regression model indicates that a unit increase in the import value index leads to an FDI increase of 16,800,000 dollars. Meanwhile, according to the fifth regression, if the time required to start a business increases by one day, FDI increases by 72,200,000 dollars.

This is contrary to a study conducted by World Bank (2013) that shows positive correlation between the ease of doing business and FDI across economies. It appears that business regulations in Southeast Asian countries may not be a factor in decreasing FDI.

Other investment variables such as real interest rate, inflation, and export value are considered insignificant determinants of FDI.

Lastly, in the case of the Southeast Asian countries considered in the study, governance, as measured by indices on the control of corruption, regulatory quality, and rule of law, is not a significant determinant of FDI flows. This result goes to show that countries that are ranked high in terms of corruption and provide poor regulatory environment may still to receive huge FDI. Previous empirical literature on the effects of the host country's corruption level on FDI inflows has shown conflicting and varied results. Some empirical studies provide evidence of a negative link between corruption and FDI inflows, while others fail to find any significant relationship (Al-Sadig, 2009).

Conclusions and Recommendations

This paper has shown the links between FDI and fiscal incentives in Southeast Asia through the use of panel data regressions. Also, it has determined other socio-economic variables that affect the investment decision of foreign investors. Five panel data regression models were employed in the analysis. Data from 1996 to 2012 for 5 Southeast Asian countries, namely Indonesia, Malaysia, Philippines, Thailand, and Vietnam were utilized.

The results of the regressions support the importance of GDP, tax rates, population, infrastructure, and investment climate in attracting and increasing FDI. In particular, GDP per person employed, air transport, import value, and time to start business, all exhibit a significant positive relationship with FDI, while population growth, Effective Average Tax Rate (EATR), and mobile cellular subscriptions are negatively related to FDI. On the other hand, governance indicators, such as control of corruption, regulatory quality, and rule of law are insignificant determinants of FDI flows.

Moreover, it is important to note that an increase in the EATR, which refers to the reduction in the returns on an investment due to the host country's fiscal system, significantly decreases FDI. This relationship may lead to the so-called "race-to-the-bottom" effect of tax

competition. Chalk (2001) pointed out how tax competition in the ASEAN can destabilize the budget of the countries involved in trade.

The study thus emphasizes the need to protect trade in the region without undermining the governments' budget through policies that involve adjustments in the tax rates or changes in the tax regime. The countries in the ASEAN may coordinate in order to determine the optimal size and scope of these tax rates and other investment incentives. This strategy will protect all countries from the various harmful effects of tax competition. Lastly, to complement the adjustments in tax rates, other country-specific factors that affect the entry of FDI may be identified and worked on. Since infrastructure has been identified to influence FDI flows, an example may be increasing infrastructure funding to build or renovate facilities that may further attract investors.

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