Influences Factors between THAI FDI Policy and Regional Distribution of FDI—Based on 77 Provinces During 1985-2016 Panel Data

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Abstract. This article studies regional distribution of Foreign Direct Investment (FDI) under Thai Foreign Direct Investment Policy 2016. Its focus is classified doing a single constructed panel data covering all 77 Thai provinces when the time 1985–2016. The work is started on the opinion that international investors analyze many focuses of location decision in all provinces (covering wage rates, GPP per head, industrial area, telecommunication and transportation, population size and density, human capital, and way from the center of city to the central harbors of Thailand) and government policy such as incentives, back choosing to move FDI in a given region. Author econometric model views propose government regional level policy, and the impact of zoning especially, nevertheless, has a positive effect and significant on regional FDI, bringing FDI to these zones that the best incentives were on proposition. The other feasible determinants of FDI regions are mainly appeared to be insignificant.

Introduction

This paper explores the regional distribution of FDI under Thai Foreign Direct Investment Policy 2016 and identifies the determinants of FDI at the regional level from a broadly ‘eclectic framework’ perspective [1]. Following both Meyer and Nguyen [2] and Zheng (2013) [3], the key determinants of FDI at the regional-level in China have been considered along with their implications about Thailand. Thai provincial-level dataset used positions the macroeconomic perspectives of all area and their differences regarding economic, social and infrastructure variables. From the related literature, the principal theoretical contributions have been analyzed to improve inform and direct branches of the econometric work on the opinion that international investors consider all these factors when making their location decisions in each province of Thailand.

The empirical results are generated and based on a sample of 4935 foreign investment projects between 1985 and 2016. The research employs a provincial dataset to offer panel analysis with data coverage during the period 2011–2016 and using Tobit, logit models and negative binomial. Policy variables such as ‘investment promotion zone’ state, devised to give investment incentives by the Board of Investment of Thailand characteristic in the model into the use of dummy variables. All zones grants tax reductions and extra privileges uniquely.

Analyzing Regional FDI: A Brief

A large and well-rehearsed literature review on the determinants of foreign direct investment usually (for useful surveys) [4, 5] and in numerous specific geographical contexts (for example) [6, 7, 8]. The results find the big cities with good harbors and/or powerful industrial baselines profited most from government policy. These cities attracted the extremely investment on the base and they gained the best increasing investment attributable for incentives. Zheng has been to investigate the determinants of pattern of FDI in China. The findings propose that prior inflows of FDI, preferential policies towards FDI, market size and geographical location, agglomeration effects, human capital and infrastructure exercise important positive influences upon inflows of FDI to China. Regional disparities are now one of the major national policy topics in China.
**Historical Background**

*Provinces in Thailand:* Thailand is divided into 77 provinces. Each province is administered by a governor, who is appointed by the Ministry of the Interior, except in Bangkok, the capital of Thailand and a special administrative area, where the governor is elected. Each province is subdivided into districts, respectively. All data used for this work is based on a panel of provincial-level data for 77 provinces during the period 1985 to 2016 [9].

*Regional FDI—Policies:* Regional FDI policy in Thailand can be perceived via many channels and, over time, has been the subject of various statutory bodies and policy emphases. Thai Board of Investment (BOI), formally governed by the 1977 IPA, has been the leading agency for attracting investment and giving investment incentives and awards. The usual goals of the BOI are (a) support exports; (b) increase employment activities; (c) encourage the transfer of technology from aboard and (d) boost industrial dispersal to rural areas.

The BOI established up a zonal policy and determined both duty privileges and tax grant according to the way of the zone from Bangkok. Businesses to be encouraged by the government were existing firms wanting to expand into areas outside Bangkok. Investment promotion areas were initially limited to seven provinces but over time these were expanded, moved and refined. The period of the seventh NESDP Plan (1992–1996) was also one which focuses on restructuring and decentralization. This plan focused on the redistribution of revenue, economic growth and the decentralization of industry to the provinces and rural areas, in addition to the promotion of human resources and the environment. A categorization in three zones was launched, and by 1992 the work was as regards: Zone 1–6 provinces; Zone 2–10 provinces; Zone 3–60 provinces. Zone 3 has also been subdivided into Zones 3a and 3b. In general, Zone 1 included the areas with a higher income and a good infrastructure – these are near Bangkok. Zone 2 had three provinces settled on both the seaboard and the economically fairly wealthy areas in about 200 km of Bangkok. Zone 3 included the regions further away from Bangkok – the provinces with low income and less developed infrastructure. Projects settled in Zone 3 would get important privileges and advantages over those settled in Zones 1 or 2.

However, recently in “Seven-Year Investment Promotion Strategy (2015-2021)” under “Announcement of the Board of Investment No.2/2557(2014) [10]. Policies and Guidelines for Investment Promotion published on December 3, 2014 which is enforced on BOI applications submitted from January 1, 2015” have amended on “new zonal policy” for dividing new criteria for granting investment incentives. New zonal policy still uses zoning area (Zone 1, 2 and 3) but add new criteria. New zonal policy criteria of BOI classifies two groups of incentives (1) Activity-based incentives and (2) Merit-based incentives. Activity-based incentives classified incentives based on importance of activities which dividing A1, A2, A3, A4, B1 and B2. Merit-based incentives are additional grant incentives to encourage investment/expenditures that benefit the country or overall industry and merit-based incentives were classified three typed are competitiveness enhancement, decentralization and industrial area development.

Therefore, the main objectives of THAI foreign direct investment under “new zonal policy” (old zone but add new criteria) to promote and attracting inward foreign direct investment to Thailand for creating economic connectivity with bordering countries and to preparing for entrance to the ASEAN Economic Community. Besides using “new zonal policy 2016” (old zone but add new criteria) to also develop the regional FDI in Thailand for attracting foreign investors to invest in Thailand.

**Trends in Regional FDI**

Prior to modeling the determinants of regional FDI, it is important to consider how the variable is measured and to examine its general characteristics. In this research, regional FDI is measured using characters about approved BOI projects. The method for firms is that projects need approval from the BOI, both for importing machinery and raw materials or for appealing in foreign technicians and experts. It is obligatory for firms to publish to the BOI on the commencement of
project implementation. FDI approved by the BOI covers projects in the next sectors: agriculture and agricultural products; Minerals, ceramics and basic metals; light industries; metal products, machinery and transport equipment; electronic and electric appliances industry; chemicals, papers and plastics; services and public unities.

The FDI dataset received from the BOI is not able to express the total population of international investors or businesses since there are BOI promoted and non-BOI promoted firms. The promotional state is awarded to a restricted period and will be awarded for the local or international firms that submitted the projects application to the BOI. However, BOI promotion is not a pre-condition for FDI and some foreign investors have chosen to invest without BOI assistance [11]. Although the number of firms under the BOI promotion system is smaller the number of non-BOI firms, the BOI firms account for 89% of the total Thai industrial investment by value and 74% of industrial employment [12]. This limitation was pointed out by Thai economists [13] in 2012 and pointed to the Thai government setting a data center to report investment values and activities of all international firms which invest in Thailand [14].

The authorized BOI dataset contains the details of each investment project including total investment, factory location, industry sector, and country of origin. In the dataset, FDI is defined as values from the whole investment of every project with foreign fairness partnership of one special nation or the sum of every registered foreign fund from more than two countries of at least 10% of total investment.

The dataset employed in this research of start-up FDI does yearly data during the time 1985 to 2016 and concentrates on two key variables:

1. NSDFI: The number of start-up FDI (NSFDI) projects per year in the province.
2. RSFDI. The total of the real value of start-up FDI projects in the province: This equals the annual value of FDI similar to the projects covered in NSFDI, decreased by the provincial GPP deflator (GPPD).

Although likely to be associated, these variables emphasize different aspects of the foreign investment process. RSFDI may well measure the total levels of regional start-up FDI but could provide a distorted view if a few projects were of very high value. Where the level of FDI per project presents essential variation, extra perspicacity can be accomplished by also checking the number of start-up FDI projects.

![Trends of FDI into Thailand 1985-2016](image)

**Figure 1.** Trends of FDI into Thailand 1985-2016 between NSDFI and RSFDI.

In 1985 there were 16 foreign direct investment projects listed in Thailand, in just nine of the 75 provinces under attention, with an average of 334 million Baht per project (1988 prices). This rose logically regularly to touch a peak of 38 provinces in 2000 (364 projects, with 280 million Baht per project) later which there was a slump until in 2005 start-up FDI was noted in only 25 provinces (203 projects, with 230 million Baht per project). Whereas there has been an overall decay in recent FDI into Thailand, it shows that these moves in total FDI have not consistently affected every province. It should also be remarked that 13 provinces have never got every start-up FDI between 1985 and 2005. After in 2008, it is the first time of start-up FDI was recorded in 76 provinces (838 projects, with a mean 419 million Baht per project). Besides in 2008-2016, there has been an overall continually increases in current FDI into Thailand. To check the related movements of FDI into the provinces over the 30 year period. Figure 1 shows the changes in the
level of FDI startups into the 75 or 77 provinces since 1985 to 2016, the numbers of FDI projects (Column Chart) and the total of the real value (unit: million baht) per year (Line Chart).

**Determinants of Regional FDI-Modelling Methodology**

See Table 1 provides details of all variables and sources used in this study.

**Table 1. Data Description and Sources.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Sources</th>
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</thead>
<tbody>
<tr>
<td>Real FDI (RSFDI)</td>
<td>Real start up FDI by province in Thailand (Millions of Baht)</td>
<td>International Affairs Divisions, Board of Investment</td>
</tr>
<tr>
<td>Number of FDI Projects (NSFDI)</td>
<td>Number of FDI projects in Thailand (projects)</td>
<td>International Affairs Divisions, Board of Investment</td>
</tr>
<tr>
<td>Real Wage</td>
<td>Real hourly wage rates of private employee by province (Baht per hour)</td>
<td>Labor Force Survey 1985–2016 By National Statistical Office (NSO), Ministry of Labor</td>
</tr>
<tr>
<td>GPP per head</td>
<td>GPP per head by province (GPP/Population)</td>
<td>National Social and Economic Development Board (NESDB)</td>
</tr>
<tr>
<td>Industrial areas</td>
<td>Industrial areas summed over all industrial zones in each province (rai) (1 rai = 0.4 acres or 1 hectare = 6.25 rai)</td>
<td>Industrial Estate Authority of Thailand (IEAT), Board of Investment (BOI), Ministry of Industry (MOI)</td>
</tr>
<tr>
<td>Communication and Transportation</td>
<td>Real values of communication and transportation spending in GPP accounts (millions of baht)</td>
<td>National Accounts Office, National Social and Economic Development Board (NESDB)</td>
</tr>
<tr>
<td>Population</td>
<td>Number of population in each province (thousand)</td>
<td>National Statistical Office, published by NESDB</td>
</tr>
<tr>
<td>Education</td>
<td>The ratio of university lecturers per habitants in each province</td>
<td>Commission on Higher Education, Ministry of Education, Thailand</td>
</tr>
<tr>
<td>Population density</td>
<td>The ratio of inhabitants per a square kilometer in each province</td>
<td>National Statistical Office</td>
</tr>
<tr>
<td>Distances from center of town to Bangkok Port</td>
<td>Distances from the center of city/town in each province to Bangkok port (kilometers)</td>
<td>Department of Highways, Ministry of Transportation</td>
</tr>
<tr>
<td>Laem Chabang Port</td>
<td>Distances from the center of city/town in each province to Laem Chabang port</td>
<td>Department of Highways, Ministry of Transportation</td>
</tr>
<tr>
<td>Zone 1 (2, 3a, 3b) dummies</td>
<td>Equal to 1 if province is located in Zone 1 (2, 3a, 3b) after 1992 onwards; otherwise, 0</td>
<td>Based on the investment promotion policy in each area/zone</td>
</tr>
</tbody>
</table>

**Determinants of Regional FDI-Results**

These results can also be set versus some other research which have analyzed regional policy effects. Several methods combining Government policy as a dummy variable within the model designation seem to show there can be significant positive effects on investment [17] [18]. Besides, friendly political/government/legal can attract more FDI and affirmed that government should promote policies, business facilitating dimensions in the pattern of agreements and investment promotion agencies for attracting FDI to the performance of national economy [19].

**Table 2. Fixed Effects Panel Regression Results.**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>RSFDI Method of Estimation (1) Tobit</th>
<th>SFDI Negative Binomial (2)</th>
<th>NSFDI (recoded 0,1) Logit (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>Coeff.</td>
</tr>
<tr>
<td>Constant</td>
<td>-</td>
<td></td>
<td>6.2508</td>
</tr>
<tr>
<td>Real Wage</td>
<td>0.2526</td>
<td>0.3817</td>
<td>-0.0827</td>
</tr>
</tbody>
</table>

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Concluding Remarks

Over the data period analyzed we discover that regional government policy has had some success in turning FDI to Thailand away from Bangkok, though total FDI to Zone 1 (including Bangkok) still made the majority (very narrowly) of total real FDI to Thailand. Therefore, FDI is still big in Bangkok though in the first five years of the data period it was attracting faraway more – 74% of the FDI. The determinants of the numbers of projects and the value of regional FDI in Thailand have been determined using a cross-section, static long run pooled time-series. The research has used the first such data source constructed for this object, using a panel data set including the period 1985 to 2016 for 77 provinces.

Three model specifications were studied, the results of which provided some obvious conclusions to be formed. Reasonably surprisingly, though this is consistent with some other researches highlighted, wages rates and many of the standard economic variables were shown to be insignificant. This could propose that levels of FDI into regions are much more the subject of specific circumstances, contacts, prior history, hunches and whims than FDI into a country itself. Alternatively, of course, the data collected on FDI may be subject to a definitional bias which does it hard to elicit the type of FDI that is influenced by these economic variables.

Moreover, work could usefully attempt to explore this research avenue, as well as the scope and possible for considering other determinants which do not explicitly feature in the modern model – regional political arguments, some particular technology arguments, or the lack or presence of particular types of skilled labor. Most importantly, nevertheless, the research affirmed that government policy was influential in attracting FDI to regions through incentives and the zoning of many provinces. Provinces in zones with the greatest incentives to start-up FDI had a significantly higher level of start-up FDI than zones with little or no incentives. These effects may thus have won the normal economic effects on the firms’ decisions on investment location and suggest there would be extra scope, if alluring, for new schemes of government interference.

Regarding the larger regional FDI research agenda, this work, besides others in different geographical contexts, resembles to raise some shortcomings insufficiently admiring the significance of individual executive and corporate responsiveness to regional/governmental policy initiatives. This resembles to justify more detailed investigation. Ideally, to provide some measure of convergent validity, option research approaches are able to be used to evaluate decision-making in admiration of regional FDI and patterns interviews with senior executives or using experimental methods, which have been applied at a more overall investment choice-theoretic level by Buckley et al., 2015 [85].
References


[16] We should note that analyses on the equity of the dummies for Zones 2 and 3b could not be rejected at the 5% level, explaining some inconsistency in the tests. Though, given the findings of the other two comparative tests, we would advise this is most likely an anomaly.

