FOREIGN DIRECT INVESTMENT FACTORS IN ASEAN COUNTRIES

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FDI is very important for the development of a country, especially for developing countries. The experience of newly industrialized countries (NICs) shows that FDI has played an important role in their economic development. In the age of globalization with cross-border flow of capital among nations, FDI becomes a key solution to reducing development gaps among nations. This research intends to identify the direct and indirect effect of ICT driving factor through openness on foreign direct investment and the direct effect of GDP Growth, GFCF on foreign direct investment. The objects of this research are ASEAN countries, while the variables in this research are macroeconomic indicators, ICT driving factor and foreign direct investment. The results are Gross domestic product growth, Gross fixed capital formation. Accessibility of digital content and Openness which affects directly on foreign direct investment, while other research variables have no significant influence. The only variable, Government Prioritization of ICT, affects foreign direct investment through openness.

Keywords: Foreign Direct Investment, Gross Domestic Product, GFCF, ASEAN, ICT.

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Introduction. The rapid growth of multinational corporations (MNCs) has become the major driver for the process of FDI because they appear everywhere in the globe as an investment center. FDI to ASEAN remains highly concentrated and dominated by a few countries. The traditional sources – Japan, the United States and the European Union – remain the significant investors. The top 10 investors accounted for more than 70% of inflows in 2012-2013. Table 1 shows that Japan was the largest investor, followed by ASEAN Member States as a group. Together they accounted for more than 36% of investment in both years. Chinese companies have also been investing actively in ASEAN and in 2013 contributed to $8.6 billion in flows. Unlike previous years, the companies of the United States invested considerably less – about $3.8 billion or only 3% of all FDI in ASEAN, dropping its ranking to seventh. The companies from four European countries (the Netherlands, the United Kingdom, Belgium and Luxembourg) invested $26 billion, representing a 21% share of the total (ASEAN Investment Report, 2014).

In recipient Industries, services and manufacturing sector continued to dominate FDI flows in the region, with some variations between the more developed member economies and the CLMV countries. Moreover, in a more competitive world, information and communication technologies (ICT) is increasingly moving to the core of national competitiveness strategies around the world, thanks to its revolutionary power as a critical enabler of growth, development, and modernization. As the years go by, ICTs, born in the military world and have spread to every social and economic activity. Nowadays, ICT has become the fundamental pillar of the knowledge economy and draws great interest to overcome many of the drawbacks of conventional system and also to save money and/ or time (Takahashi, et al., 2004).

Availability of latest technology, firm-level of technology absorption, government prioritization of ICT and accessibility of digital content are four of the many driving factors of ICT. The four driven factors of ICT become important in this sophisticated era. Availability of latest technology will increase a firm level of absorption and production because the more sophisticated the technology, the more effective and efficient the production. Yet, government have a big proportion to support technology activities by prioritization and concern about it. In order to increase the economic flow, the government can push the business sector to publish the report so to attract the investor. Investor could freely and easily access the report – which has been changing to digital report – moreover, can help to assess business and economic conditions (Lee, 2014).

ICT can give impact to FDI flows through increasing productivity across all sectors, facilitating market expansion beyond borders to harvest the economic scale and lowering costs and facilitating access to services, notably in administration, education, health and banking (Africa Partnership Forum, 2008). Cho and Ha (2009) declare that ICT infrastructure is one of the major determinants to attract FDI. The aim of this research is (1) to analyze the effect of GDP growth and GFCF on FDI; (2) to analyze the effect of latest technology, technology absorption, ICT government and accessibility of digital content to FDI, intervened by openness.

Literature review

Capital inflows from abroad can be divided into three categories, namely foreign investment and foreign direct investment (FDI). In general, FDI is a form of direct capital investment engaged in various fields. The main reason for that opinion lays in FDI scheme where business failure risk is born by foreign investors, while for debt financing, the country concerned (in any condition) should bear the risk and oblige to pay the debt principal plus interest. Moreover, FDI is associated with direct ownership, control of plant, equipment and infrastructure which help to finance the creation of capacity growth in an economy, while the short-term foreign debt is more frequently used to finance consumption. According to Moosa (2002), theories of FDI can be classified into four types: (1) Theories assuming perfect market; (2) theories assuming imperfect market; (3) other theories; (4) theories based on other variables.

Gross fixed capital formation includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.

In this study GFCF is employed as a proxy of infrastructure. This selection is based on the notion that other measurements of infrastructure such as roads, telephones and ports, only reflect the existing infrastructure and not the potential infrastructure as it is included in GFCF. Therefore, the GFCF is considered to represent both existing and potential infrastructure.

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Trade openness refers to a degree of which countries or economies permit or have international trade with others. Trade activities include import and export, inter countries investment, borrowing and lending, and repatriation of funds abroad. Open economies mean greater market opportunities. However, at the same time they also face greater competition from businesses based in other countries. From the perspective of financial development, trade openness means the ability of an economy to obtain funds from other economies, and willingness to invest its surplus fund to other countries.

ICT has become a dominant force in enabling the company to take advantage of new distribution channels, create new products, and provide differentiated value-added services to customers (Maris, 2013). In general, strategic use of ICT to support governance processes includes ICT-enabled transformation in the relationships with business and others. In particular, ICT helps to: deliver public services over electronic and traditional channels, engage various social actors in decision-and policy-making processes and regulate the activities of such actors (Coleman, 2008; Finger, 2005), as well as generate and circulate official communication in digital forms (Coleman, 2008) to reduce information asymmetry in the society (Finger, 2005).

**Research method**

The data acquired from the observation unit, macroeconomic indicators observation units are its driving factors: 1) GDP Growth, 2) GFCF, 3) openness. ICT observation driving factors are: 1) availability of latest technologies, 2) firm-level of technology absorption, 3) government prioritization of ICT, 4) accessibility of digital content. The last for foreign direct investment's observation unit are the inflows from the FDI activities in each country.

For this research, sample criteria’s as follows:
1. ASEAN countries which listed in the United Nations,
2. ASEAN countries which participate in the Network Readiness Index Survey in period 2008-2013,
3. ASEAN countries which listed in the United Nations Conference on Trade and Development (UNCTAD) in period 2008-2013,
4. ASEAN countries do FDI activities,
5. ASEAN countries which have positive FDI inflows.

The population of ASEAN are 10 countries. However, based on the criteria noted above there are 8 countries which meet the criteria of all ASEAN countries.

Dependent variable in this study is FDI. FDI data in this study refer to FDI net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors where the data are measured in current US dollars. The operating variables table can be set up as follows:

**Table 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Explanation</th>
<th>Scale</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI Inflow</td>
<td>Net foreign investment</td>
<td>Ratio</td>
<td>World Development Indicator</td>
</tr>
<tr>
<td><strong>Independent Variable:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP Growth</td>
<td>GDP Growth as percentage increase or decrease of GDP</td>
<td>Ratio</td>
<td>World Development Indicator</td>
</tr>
<tr>
<td>GFCF</td>
<td>Gross Fixed Capital Formation.</td>
<td>Ratio</td>
<td>World Development Indicator</td>
</tr>
<tr>
<td>Availability of Latest Technologies</td>
<td>Availability of latest technology in the country</td>
<td>Ratio</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>Firm-Level Technology Absorption</td>
<td>Level of firm in absorbing technology</td>
<td>Ratio</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>Government Prioritization of ICT</td>
<td>How much the government in a country place on ICT</td>
<td>Ratio</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>The Accessibility of Digital Content</td>
<td>Accessibility of digital content via multiple platforms</td>
<td>Ratio</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td><strong>Intervening Variable:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>The level of trade openness in host country, (Export + Import) / GDP</td>
<td>Ratio</td>
<td>World Development Indicator</td>
</tr>
</tbody>
</table>

Source: WEF Secondary Data, and WDI Secondary Data Test Path Analysis was performed using AMOS software version 20.

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Result and discussion
1. Research Model Testing
By using AMOS 20 software, the goodness of results reflected in table 2 below.

<table>
<thead>
<tr>
<th>Good of fit index</th>
<th>Cut-off value</th>
<th>Model result</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>≤ 0.08</td>
<td>.000</td>
<td>Very good</td>
</tr>
<tr>
<td>GFI</td>
<td>≥ 0.90</td>
<td>.998</td>
<td>Very good</td>
</tr>
<tr>
<td>AGFI</td>
<td>≥ 0.90</td>
<td>.967</td>
<td>Very good</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>≤ 3.00</td>
<td>.172</td>
<td>Very good</td>
</tr>
<tr>
<td>CFI</td>
<td>≥ 0.95</td>
<td>1.000</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Source: AMOS v. 20 Output, 2015.

Table 2 shows that RMSEA value of 0.000; GFI value of 0.998; AGFI value of 0.967; value of CMIN/DF of 0.172; CFI value of 1.000 indicates that the model fit is very good.

Path Analysis Test Result
In AMOS it can be seen how strong the variables can influence the dependent variable, it is called standardized regression weight. The standardized regression weight of this research can be seen in the following figures.

Figure 1 shows a path analysis diagram which illustrates the results of hypothesis examination in this research. The figure listed in the diagram shows the influence within the variable in the research.

GDP growth has direct impact on FDI, the results are consistent with research Rininta (2011) which states positive relationship between FDI inflow and economic growth. Percentage of GDP as a catalyst to FDI is assumed to raise the productivity of private capital by financing both public and private investments such as location-specific capital ventures, human capital resource investments, diversified microeconomic investments, and community support, maintenance and sustenance (Azeez, and Begum, 2009).

Over the next 20 years, Southeast Asia will be one of the world’s fastest growing consumer markets with ASEAN members’ GDP forecast to rise more than fourfold to US$10 trillion by 2030. The combined GDP of member nations is already significantly higher than India’s economic output and by 2018, it will exceed that of Japan according to US industry analyst IHS Global Insight. The AEC will unleash a new era of growth by creating a competitive market of more than 600 million people in the ten member nations.
member countries comprising Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam (Investing in ASEAN, 2013).

ASEAN accounted for 3% of the global economy in 2013 but attracted more than 8% of global FDI flows. It accounted for 8% of the combined GDP of emerging markets and developing countries but received 16% of global FDI flows to the developing world. Higher inflows over the past decade have produced a five-fold rise in FDI stock per capita, from $500 in 2000 to nearly $2,500 in 2013 (ASEAN Investment Report, 2013).

As a result of continuing high levels of investment, the contribution from industry and manufacturing to economies throughout the Region continues to grow. In Indonesia, the sector’s contribution to GDP has reached 47%, 40.2% in Malaysia and 31.1% in the Philippines, and Singapore’s services dominated economy industry still accounts for 26% of its GDP (CIA World Factbook, 2013).

Biotechnology is seen as one of the key strategic areas that will support the growth of the country’s economy providing 5% of GDP by 2020, when up to 280,000 direct and indirect jobs are predicted to be created. Investment whether in ports, airports, roads, railways, power, water and sanitation or ICT serve as a catalyst for expansion in the economy by lowering the costs of conducting business and as a result contributing to GDP growth. Agricultural output is increasingly important in the composition of the Regions exports. Between 2003 and 2010, agro-based exports increased threefold with the total value rising from US$11.8 billion to some US40 billion. Food processing and manufacturing contributed up to 13.5% of GDP (Investing in ASEAN, 2013).

Travel and tourism business is estimated to contribute to 11.1% of total GDP. Revenues now generated are estimated to sustain a total of 25.4 million jobs, some 8.8% of total employment, across a wide range of economic sectors according to the World Travel and Tourism Council (WTTC, 2013).

No country can afford to be left behind in the digital revolution. It is estimated that a 10% increase in internet penetration leads on average to 1% of sustainable GDP growth, while a doubling internet speed can improve GDP by 0.3% (Investing in ASEAN, 2013).

GFCF has direct impact on FDI. The results are consistent with research Fahmi (2012) which states the more infrastructures will end up with the higher FDI inflow. Infrastructure consists on communications, roadways, transportation, highways and ports among others. In recent studies, Khadaroo and Seetanah (2010) addressed mainly on transport infrastructure along with some other variables of FDI and evidenced the positive significant contribution of infrastructure in captivating FDI. Though, the studies of Akhtar (2000) and Aqeel and Nishat (2004) contribute towards the literature on FDI for Pakistan, but these studies ignored the important determinant of FDI i.e. infrastructure (Khadaroo & Seetanah, 2010).

Infrastructure can have different impact on developing and developed nations. In developing economies, infrastructure has a significant attractiveness for FDI inflows (Khadaroo and Seetanah, 2010; Asiedu, 2006). Sekkat and Varoudakis (2007) assess that Infrastructure has a significant attractiveness of FDI even than that of openness and investment climate in developing countries. Addison et al. (2006) acknowledge such promotional impact only for developed nations but, on the other hand, such situation does not exist for developing countries. Whereas, Bae (2008) states that in developed countries, infrastructure is not a motivator but an indicator to attract FDI in large emerging economies.

Infrastructure availability promotes both types of FDI, with comparatively more impact on vertical FDI as it reduces operational costs. Poor infrastructure causes increase in transaction cost and limits access to both local and global markets which ultimately discourages FDI in developing countries. A greater efficiency can be achieved in extending infrastructure facilities by considering commercial principle and shifting liability for provisioning of infrastructure facilities though management contracts or leases such as build-operate-transfer (BOT), build down operate (BOO) and full privatization. As a matter of fact, privatization has come up with a useful source of attracting inward FDI (Mlambo, 2006).

Availability of latest technologies has no direct impact on FDI. The result indicates that foreign direct investment in every country in ASEAN is not affected by availability of latest technology. There are many other things that foreign investor should focused when do the FDI activities such as political condition, economic growth and many others (Sun, et al., 2002; WEF, 2012; Sarwedi, 2002). Yet availability of latest technology in the host country of FDI is only the focus of foreign investor because FDI in the host country become a driven factor for transfer technology in the host country (Lai, et al., 2009). Maris (2013) declares multinational companies which do the FDI activity will bring the latest technology that has implemented in the origin companies to a subsidiary that will be built or acquisition nr. 4/ 2016
company. This happens because the subsidiaries and acquisition companies will adopt the origin enterprise systems and tool of origin companies. Therefore, the availability of latest technology is not a major factor in attracting foreign investors to invest their funds in the country of FDI destination. Moreover, result of hypothesis 3 consistent with the result of Maris (2013) and Lee (2014).

In addition to the direct effect on FDI, availability of latest technology also has no effect on openness. These results contrast with Iyer et al. (2006) confirm these findings and show that developing countries can increase their technological catch-up by opening up to trade and foreign direct investment. Improvements in transport, telecommunications and information technology, together with increased economic integration and greater trade openness, have resulted in higher levels of technological diffusion and increased mobility and accumulation of productive factors over time (World Trade Report, 2013).

Firm-level of technology absorption has no direct impact on FDI. The result declare that foreign direct investment in every country in ASEAN is not affected by firm-level of technology absorption. However, these results are in contrast with the results of the research Lee (2014) which states technologies absorption and innovation capabilities are intimately depend upon the government and societal institutions. Government and societal permission to absorption technology will help manager to make increase the company level of technology absorption, when the company become attractive it can increase the FDI inflow to the host-country.

In addition to the direct effect on FDI, firm-level of technology absorption also has no effect on openness. These results contrast with Comin and Hobijn (2004) find that the degree of openness to trade is one of the most important determinants of the speed at which a country adopts more advanced technologies because it introduces the pressures of foreign competition on incumbents, thereby reducing their payoff from lobbying the government to deter the adoption of new technologies.

Government prioritization of ICT has no direct impact on FDI. The results are consistent with research Maris (2013) which states inflows of FDI in host country have not affected by government prioritization of ICT. It is because of ICT which is not a major factor in the business sector of the company in the country of FDI destination (Maris, 2013). When government is not concerned about ICT and has a weak investor protection it will become a disaster for FDI host country. Foreign investor will not make that country as FDI destination (Ayogu and Bayat, 2010). In South Africa there is a case which is declared by Ayogu and Bayat (2010), When the government has not prioritization in ICT but has good protection of investor, the FDI flow is still good and has insignificant influence by government prioritization of ICT (Ayogu and Bayat, 2010).

However, government prioritization of ICT has effect on openness. Some of investor believe that ICT is a crucial part of economic growth to increase the effective and efficiency company. When the government does not support and supply the infrastructure it will make the investor to think again to invest in the host country. Developing countries must develop more technological capability and greater flexibility to succeed in the more demanding and asymmetric global environment to increase openness, especially in developing countries.

Since the implementation of recommendations provided by Hong Kong’s telecommunication regulatory body (OFTA), the country was able to fully liberalize its ICT market in 2001 and maximize an open ICT competition (ITU, 2007). Currently, there are no limits on foreign ownership of the ICT sector and FDI inflow is encouraged by the internal government. The openness of Hong Kong towards its ICT market and its clear market conditions make the country an attractive place for ICT operators and investors.

Accessibility of digital content has direct impact on FDI. When government gives permission to free access digital content it can support the economic growth through lowering cost and facilitating access to service, notably in administration, education, health and banking; providing access to research; and of course it can contribute to better governance, a prerequisite to growth through increased participation, accountability and transparency (Africa Partnership Forum, 2008). The result also consistent with Maris (2013) and Lee (2014), this finding suggests that the accessibility of digital content can attract foreign investors to invest their funds in Asia countries OCED (2006) cited by Maris (2013) states that most of the business activities increasingly depend on digital content. With the case of accessibility of digital content form a country, investors are not going to worry about the business activities in the country.

However, accessibility of digital content has no effect on openness. Clarke (2004) declares the cross-country correlation suggests a possible causal relationship between Internet use and exports, but tells us little about the direction of causality. That is, even if the correlation is not spurious, we cannot
determine whether trade openness encourages Internet use, Internet use stimulates trade, or both. These results contrast with Wallsten (2003) and Baliaamone (2002) find that Internet users made up a greater share of the population in developing countries that are more open to trade. Other studies have also found that additional measures of ICT use and investment are correlated with various measures of openness. In general, the correlation between ICT use and openness appears to be stronger in developing countries. Several of the papers that find a positive correlation between measures of ICT use and openness focus on developing countries (Baliaamone, 2002).

Openness has positive effect on FDI. It indicates that openness is one of the many factors important to foreign investor when doing the foreign direct investment. Trade openness enhances the integration of a nation’s trade regime into the global economy requiring opening up of the external sector to the international community and the dismantling of international trade barriers (Dean, et al, 1994). The results are consistent with research Fahmi (2012) which states open market policy from government which encourages international trade in the form of export and import. Yasmin, et al (2003) states that domestic investment, labor force, external debt and trade openness as the significant determinants of the flow of FDI. The impact of openness on FDI depends on the type of investment. When investments are market-seeking, trade restrictions (and therefore less openness) can have a positive impact on FDI (Asiedu, 2002). The reason stems from the “tariff jumping” hypothesis, which argues that foreign firms that seek to serve local markets may decide to set up subsidiaries in the host country if it is difficult to import their products to the country. In contrast, multinational firms engaged in export-oriented investments may prefer to invest in a more open economy since increased imperfections that accompany trade protection generally imply higher transaction costs associated with exporting.

Conclusions, based on the results of analyses and discussions, are as follow.

Gross domestic product growth, Gross fixed capital formation, Accessibility of digital content, and Openness, which affects directly on foreign direct investment. Thus, it can be concluded that every enhancement in those variables can attract FDI inflows.

Availability of latest technologies, Firm-level of technology absorption, Government Prioritization of ICT, Availability of latest technologies do not affect directly on foreign direct investment. Thus, no matter how much the availability of latest technologies in a country, it cannot increase or decrease FDI inflows.

Only Government Prioritization of ICT affects foreign direct investment through openness. While the other variables have no significant indirect impact through Openness.

Based on the statement above direct effect in this research is greater than indirect effect on FDI.

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