

The influence of macroeconomics variables on outward FDI in Asia Countries

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Abstract

This paper aims to identify the determinants of outward foreign direct investment in eight countries in Asia region, namely, Malaysia, Singapore, China, Hong Kong, India, Taiwan, Thailand and South Korea. Five main macroeconomics variables were identified influencing the rate of outward FDI in these countries. The factors are inward investment, employment, Gross Domestic Product (GDP), technology advancement and exchange rate. The study was based on the secondary data collected from World Bank data and United Nation (UNCTAD) data, comprising 15 years from 2000 to 2014. Being quantitative in nature, the data were regressed in Ordinary Least Square (OLS) tests using Stata. The results of the study showed that all macroeconomics variables are significant except employment factor.

Keywords: Employment, exchange rate, inward FDI, outward FDI, technology

1. Introduction

Nowadays, foreign direct investment was crucial sources to develop the economy in a country. Through foreign direct investment, it could increase the productivity in term of labor, production, and technology transfer. Since the 1980s, there was significant of outward FDI in emerging economies countries around Asia region after the liberalization policy has been implemented ^[1]. Furthermore, liberalization policy encourages the domestic firm to expands the business in abroad. Based on a study by ^[2] found that first outward FDI wave was done by 15 countries where 81% are from developing countries in 1980. These shows that developing countries are the most contribution in term of outward FDI compare to developed country due to strength their economy. Then the second wave began where firms that come from China, Korea, Taiwan Singapore and Hong Kong to invest abroad ^[3, 4]. Recently, the level of outward FDI has increased drastically in emerging economies especially in Asia countries ^[5].

Most of the empirical studies were agree that outward FDI will give benefit to a home country where it could increase the number expertise labors, more research, and development in technology and increase the production. This is supported by ^[6] where they found positive impact toward macroeconomic variables such as international reserves, gross domestic product (GDP) and exchange rates. Even though the number of studies agrees that outward FDI will give benefit to home country but when many domestic firm use subsidiaries in abroad it will cause the number of labor and production move to abroad ^[7]. Hence, outward FDI will slow the economy performance in home countries. The issue is whether the local firm that makes outward FDI will strengthen or weakens the economic activity at home. The aim of this study is to examine the factor of macroeconomic variables that affect outward FDI in home countries.

2. Literature Review

Globalization had brought new breathing to whole countries in term of the economy sector. Through globalization, a country can do more international trade either export or import to fulfill the people want. Other than that, foreign direct investment also has been important sources to develop the economy in a fast way. Outward FDI was the sector that also can give benefit to home countries by increase the productivity of labor, and production. According to ^[8] reported that outward FDI has been employing more in Asia region which has been important sources for emerging market. Outward foreign direct investment has start with a series of wave whereby outward (FDI) reach a peak about \$813.1 billion in the year 2004 and slightly decrease to \$778.7 billion in 2005 (United Nations, 1996). There are about 15 countries that firstly start outward FDI, which contributes to 81% from developing countries in 1980 ^[2]. According to ^[3, 4] Brazil and Argentina that invest in outward FDI about 13.4% and 20.4% that followed by Asian country (Korea, Singapore, Taiwan and Hong Kong) that contribute about 22%. Furthermore, ^[3, 4] also identified that Malaysia, Brazil Argentina, India, And China that aggressive contribute in outward FDI. For the second wave, it was found by ^[3, 4] that firm from Korea, Taiwan, China, Singapore and Hong Kong began to act in outward FDI.

2.1 Relationship with Gross Domestic Product (GDP)

When a domestic firm makes outward FDI in abroad, most of the firm will bring back all the expertise labor and machine to be utilized in the home country. In another word, it will increase the volume of production in the home country by utilizes the labor and machine that can increase the production with low cost. This support by ^[9] that reveal the outward FDI

has a significant positive relationship with gross domestic product (GDP) in home countries where to use the panel analysis from 1971 to 2005 for united state industry study. However, this empirical study has an argument by [7, 10] where they found GDP had an insignificant relationship with outward FDI.

Some researchers [11] found that GDP was macroeconomic variables that have a positive relationship with outward FDI in home country for the long term. This finding supported by [12] resulted where the positive relationship between outward FDI for study case in Malaysia. So, GDP is assuming to have a positive correlation with outward FDI. Therefore, the following hypothesis was proposed:

H1: There is a significant positive relationship between GDP in the home country and the outward FDI.

2.2 Relationship with Inward FDI

Inward FDI contributes in term of marketing strategy, technology, and labor expertise in home country which will stimulate the domestic firm to open their business in abroad. Also, domestic will take an advantage from firm foreign strategy to do outward FDI in abroad. This will cause the level of outward FDI which can develop the economy in the home country. According to [12] found that inward FDI has a significant positive relationship with outward FDI where domestic gain benefit in term of technology knowledge when a foreign firm enters the market. Moreover, this also supports by [13] found that inward FDI was a major determinant of outward FDI.

Many empirical studies found inward FDI has a positive relationship with outward FDI in the home country where inward FDI will give benefit to them in term of technology transfer, change of information strategy and an increase in productivity of labor. This parallel with a study by [12] that found outward FDI in Malaysia has a positive relationship with inward FDI. Thus, the second hypothesis was proposed as follows:

H2: There is a significant positive relationship between inward FDI in the home country and the Asia countries outward FDI.

2.3 Relationship with Exchange rate

Most of the domestic firm that involve in outward FDI will concern with the exchange rate in home country because it will influences the cost of production in abroad. This support by the study of [14] that found the level of outward FDI decrease as the exchange rate in host country appreciate. Outward FDI has a negative relationship with the exchange rate in the host country and positive relationship with the exchange rate in the home country.

The exchange rate was an important factor that influences the level of outward FDI in the home country. Many empirical studies found the national with strong currencies will invest to a country that weak in currencies. This support by [15] that revealed the firm would have financial advantages in term of production cost when to operate the business in a country with weak currencies. Also, [16] points out to support the study that depreciation in host country encourages the investor from abroad to increase the level of outward FDI. Hence, the third hypothesis was proposed as follows:

H3: There is a significant positive relationship between the exchange rate in the home country and the outward FDI.

2.4 Relationship with Employment

When outward FDI has been done in abroad, the expertise labor will return to a home which they can contribute to production in the home country. The majority of the previous study agree when domestic firm involves in outward FDI in abroad, it will cause the level of employment will follow to increase. This support by [17] where found the positive relationship between employment and outward FDI in the long term. But, the study by [18] found there is a significant negative relationship between outward FDI and employment. This also supported by [19] which found the level of outward FDI decrease as the outward FDI increase due to movement of labor to abroad.

Most of the empirical studies found that level of employment has a significant positive relationship with outward FDI due to the domestic firm will bring back all the expertise labor that conduct the production in abroad to the home country to work with the local firm. This supported by [20] that found when the local firm increase the level of outward FDI it will cause the number of employment also increase. However, this study contradicts with [20] study which found that there are no significant relationships between outward FDI with employment level at home country. Therefore, the fourth hypothesis was proposed as follows:

H4: There is a significant positive relationship between the level of employment in the home country and outward FDI.

2.5 Relationship with Technology

The technology was the crucial sources that can be as competitive advantages in term of business sector [21]. Technology that imports from abroad have increased the level productivity of multinational firm [22]. This show outward FDI has a significant relationship with technology. Thus, the last hypothesis was proposed as follows:

H5: There is a significant positive relationship between technology in the home country and outward FDI.

3. Conceptual framework

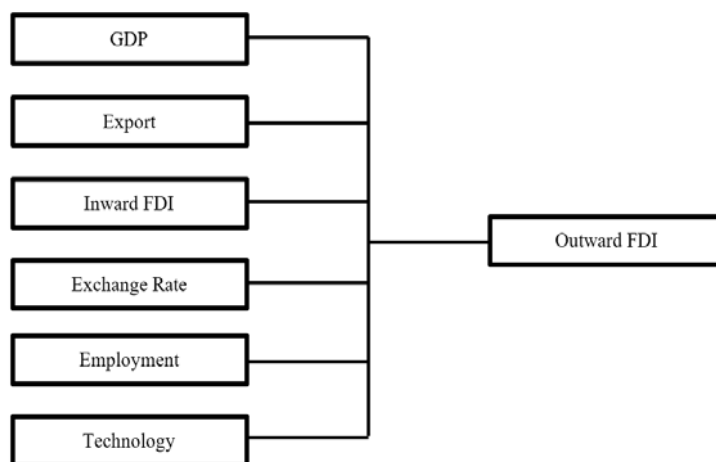


Fig 1: Conceptual framework

The model above was used to describe the factor that influences the flow of outward FDI among Asia countries that has been selected in this study. The variable has been selected based on the previous study that has been done. All independent variable has been estimating to affect the level of outward FDI in eight Asia countries. The variable was based on OLI theory which has been formed by Dunning.

OFDI= f {GDP, IFDI, Exchange rate, employment, and technology}

$$OFDI_{it} = a_{it} + B1 \ln GDP_{it} + \beta2 \ln IFDI_{it} + \beta3 \ln Ex_{it} + \beta4 \ln Emp_{it} + \beta5 \ln Tech_{it} + \epsilon_{it}$$

- a = Constant
- ln = log
- OFDI = Outward Foreign Direct Investment
- GDP = Gross Domestic Product
- IFDI = Inward foreign Direct Investment

- EX = Exchange rate
- Lab = Employment
- Tech = Technology
- ε = Error term
- i = cross sectional
- t = time series

The independent variables that have been selected have a different unit which will cause the data have a unit root. To solve unit root, logs model will be used in this study to gain stationary data which all variables need to transform into a log. The panel data will be used in this study which to analyze the factor that influences the level of outward FDI. About eight nations have been selected in Asia region with use period for fifteen years (2000-2014).

4. Results

Table 1: Fixed effect regression test

| | | | |
|-----------------------------------|--------------------|---|--------|
| Fixed-effects (within) regression | Number of obs | = | 120 |
| Group variable: code | Number of groups | = | 8 |
| R-sq: within = 0.4691 | Obs per group: min | = | 15 |
| between = 0.7368 | avg | = | 15.0 |
| overall = 0.6011 | max | = | 15 |
| | F(5, 7) | = | 36.49 |
| corr(u_i, Xb) = -0.9966 | Prob > F | = | 0.0001 |

(Std. Err. adjusted for 8 clusters in code)

| lofdi | Coef. | Robust Std. Err. | t | P> t | [95% Conf. Interval] |
|---------|-----------|-----------------------------------|-------|-------|----------------------|
| lgdp | 2.810462 | .8946124 | 3.14 | 0.016 | .6950395 4.925884 |
| lifdi | .3229868 | .1053502 | 3.07 | 0.018 | .0738731 .5721005 |
| lnexh | -2.082233 | .3951473 | -5.27 | 0.001 | -3.016608 -1.147858 |
| lntech | -.9904009 | .3126842 | -3.17 | 0.016 | -1.729782 -.2510203 |
| lnemp | -6.440643 | 2.926145 | -2.20 | 0.064 | -13.35988 .4785905 |
| _cons | 50.12501 | 23.10996 | 2.17 | 0.067 | -4.521374 104.7714 |
| sigma_u | 10.111094 | | | | |
| sigma_e | .51945893 | | | | |
| rho | .99736754 | (fraction of variance due to u_i) | | | |

$$LOFDI = 50.1250 + 2.8104 \lgdp + 0.3230 \text{ lifdi} - 6.4406$$

$$\text{lnemp} - 2.0822 \text{ lnexh} - 0.9904 \text{ lntech}$$

(50.1250) (0.8946) *** (0.2054) *** (2.9216) (0.3951) *** (0.3126) ***

- (.....) = standard error
- *** = 1% significance level
- ** = 5% significance level
- * = 10% significance level

5. Discussion

5.1 Gross Domestic Product (GDP)

Since, the P value is more than 0.05, therefore, this study supports the H1, which is there is a significant positive correlation between GDP and outward FDI at 100% significance level. 1% increase in GDP will increase the level of outward FDI by 2.8104%. This result corresponding to the study by [9, 23, 24] that found the outward FDI has significant positive correlation with the GDP.

5.1 Inward FDI

Since the P-value is less than 0.05, thus, the H2 is supported, which is there is a significant positive correlation between inward FDI and outward FDI at the 100% significance level 1% increase in inward FDI will increase the level of outward FDI by 0.3230%. This result supported by [13, 23, 15].

5.2 Exchange Rate

Exchange rate found to have a negative significant relationship with outward FDI. In other words, the H4 is not supported. The result indicates that a 1% increase in the exchange rate will decrease the level of outward FDI by 6.4406%. Although most of the empirical studies found a positive correlation in their study, the results of this study, however, have been supported by^[11,14,15]. These aforementioned studies have found there is a negative relationship between outward FDI with the exchange rate in the home country. The reason might be due to the developing countries' scarcity in terms of resources, technology and expertise labor.

5.3 Employment

Since the P-value is more than 0.05, therefore, the H4 is not supported. In other words, there is an insignificant negative correlation between employment and outward FDI. This finding shows there is no positive correlation between outward FDI and employment level which tallies with a study by^[25,26] that found there is no significant correlation between outward FDI and employment level in home countries.

5.4 Technology

Since the P-value is less than 0.05, thus, the H5 is supported, which is there is a significant negative correlation between technology and outward FDI at 100% significance level. The result indicates that a 1% increase in technology change will decrease the level of outward FDI by 0.9904. The result shows the technology in the home country has a negative relationship with outward FDI. This result is supported by^[27] that reveals developing countries still can make outward FDI by transferring their low technology to abroad. Other than that, Rajan (2002) indicates that firms from developing countries import the technology from abroad.^[28] highlighted that the textile industry in India became more efficient when technology transfer brought by the multinational firm from abroad.

6. Policy Implications

In conclusion, outward FDI has an important role in home countries which can strengthen the economy. The reason is that outward FDI has a positive significant relationship with GDP and inward FDI with both variables influences the level of economy in home countries. Increase in the number of GDP shows the production that produces in home countries can help the economy grow, also, increase in inward FDI also has brought benefit to local industries with the local firm can gain some knowledge from the multinational firm from abroad such as technology change, market strategies, and production makes. Even though there was a significant negative relationship between outward FDI with technology level and exchange rate but that was not a pure measure of the economy in the home country. So, this study recommends that all countries need to increase the level of outward FDI that can boost up the economy growth. Each government needs to imply policy that can attract local firms to involve in outward FDI such as give incentives to support local firms invest in abroad. According to^[13] revealed that liberalization policy had enhanced the level of outward FDI in Malaysia. Moreover, Malaysia government that led by Tun Mahathir Mohamad had encouraged the local firm to change their business behavior to abroad which switch to high technology^[13,29].

7. Recommendations

The lack of study related to the impact of outward FDI in the home country especially from developing countries causes different findings among researchers. To solve this limitation, future researchers may continue to analyze this study which comes out with strong findings and reasons. Further study can increase the period of time and also find new variables which can improve the study toward outward FDI in the home country. Other than that, exchange rate variables need to be discovered in the further study due to having a negative relationship with outward FDI. Moreover, this study needs to understand the major factors that influence the level of outward FDI to avoid missing important variables. Further study might be able to study with new mechanisms such as patent, natural resources, and government incentives.

8. Conclusions

In conclusion, government policy also plays an important role to stimulate the level of outward FDI in a country. For instance, subsidies are given for research and development will give advantages and can attract firms to make investment abroad. Without government policy that will be difficult to motivate local firms in a way to grab the new opportunity in overseas. Outward FDI flows also influenced by government policy that to encourage the domestic firm to gain new experience when to operate in abroad especially technology expertise. When the firm has learned something new, they will bring back all experience to apply in home countries which benefit to another local firm. Even though, there was a negative insignificant relationship between outward FDI and technology in home countries, a firm from Asia countries can develop more technology in home countries by switching the technology information.

9. References

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