CHAPTER 2

THEORETICAL BACKGROUND AND LITERATURE REVIEW

The content of this unit describes two theories that are used as a foundation of the study. The theories are Eclectic Model and Gravity Model, are referred. Also, international investment studies of UNCTAD and other previous interesting studies related to the topic are presented in according to their based theory.

Theoretical Background

This paper investigates the determinant of international inward investment flows by applying two foundations, Eclectic Model and Gravity Model. Eclectic Model is such a descriptive theory explaining reasons why a firm should invest across borders. Meanwhile, Gravity model is ordinary applied to describe the influence of the two countries' distance over their trade flows. Actually, in international investment studies, the eclectic model is generally referred, where gravity model is used as international trade theory. The eclectic model normally suspects that FDI tends to be taken if the two countries are far away to reduce transaction cost. In contrast, the volume of trade is negatively related to the distance between the two countries.

1. The Eclectic Theory of Foreign Direct Investment

1.1 Theoretical Framework

The eclectic theory is such a recognized model used in describing the direct investment flows. The theory explains broadly why international investment incurs. John H. Dunning and Norman G. present ideas about the three advantages inducing a firm to invest internationally in The Location Choice of offices of International Companies in 1987. The advantages are ownership advantage, location advantage, and internalization advantage.

Ownership advantages

Ownership advantages concern those advantages that an investing firm has against other competitors in the competing market. Those possible advantages are broadly called "proprietary advantage". Not only its definition refers to more advanced capital, but also higher productions skills, specialization, managerial know-how, marketing advantages, products properties, etc. The advantage always accompanies with monopoly power in some level. They also differentiate the firm's product from others. Several firms are induced to expand their production across borders to grasp the profit from this advantage. The firm can present its new (which may already be old in its original home market) or cheaper products to the market.

However, for a firm to invest offshore, it must ensure that the ownership advantage provides their profit large enough for expanding

affiliates aboard. The margin should be high enough to cover the fixed cost and additional increasing costs, otherwise firms can choose other modes of entry to sell their products oversea.

Location advantage

Location Advantage implies to advantages on market size, price, cost, sale volume, economy of scope, economy of scale, etc., which are induced by firm's location. Hence, it can be said that economic environment of a country defines the country's location advantage. The location advantage can be categorized either as demand-induced or supply-induced.

For instance, exchange rate, inflation rate, consumer preference, concentration of the market, etc are examples of demand-induced advantages. The wealth and the market size of the host nation makes investing firms sell more and easier too. The change in sale volume will simultaneously affect the firm economy of scale/scope. Settling down a new affiliate also take effect on firmness' export volume too. The new affiliate then takes lower cost of exporting especially when it receives tax exemptions, or other subsidies according to government promotions. Meanwhile, lower labor cost, and lower transaction costs are those that can be categorized as supply-induced advantages.

Moreover, as firms are profit maximizing economic agent, firms must ensure first the total cost of settling that new affiliate shall not be greater than the overall cost if it produces and exports from the existed affiliate so they can

enjoy higher profit (Horst, 1971). Thus, the location factors can highly affect the decision of international direct investment.

Cost of investment must be studied carefully. Then, market size of the host market, that implies economy of scale, supply chain, resources availability, and the technology availability are taken into consideration. The extent to which foreign affiliates forge linkages with domestic suppliers is determined by the balance of costs and benefits, as well as differences in firm-level perceptions and strategies. While the costs and benefits reflect a large number of industry-specific factors, the most important one concerns the local availability of qualified suppliers. The lack of efficient domestic suppliers is often the key obstacle to investment inflows. Many MNEs encourage foreign suppliers to establish local facilities or produce in-house. Some of them have supplier development programs in the host countries. (Caves, 1996)

For operation procedures, working system, communication troublesomeness, and legal procedures shall also be such local factors that affect the decision as well. Meanwhile, vertical investment refers to those investment expanded forwardly or backwardly. The products will not be similar to those in the home nation. However, they can somehow relate as materials, components, etc. Adversely, it is possible that firms may invest and import materials from its home nation to produce final products in host nations.

Internalization advantage.

Providing proprietary advantage accompanying with location advantage a firm may acquire, firms are induced to take *internalization advantage.* Backward internalization provides higher operational profit to the firm by reducing transactional cost among various activities and also the profit margin that the firm has to pay. Forward internalization will provide more profit to the firms as well by increasing value added to the products. By internalization, the firm must ensure higher rate of productivity and profitability.

1.2 Previous Studies

As international foreign direct investment is widely used as a tool for economic development in many countries, a number of studies has been made to investigate the determinants, process, and effects of FDI. Among the studies, UNCTAD, which is a central unit, established by United Nations as a center for trade and investment corporations among its member is an expertise in the area. Hence, the studies of UNCTAD is referred as literature reviews by this paper. Meanwhile, several other studies are also presented as references.

1.2.1 Studies by UNCTAD

UNCTAD (2001) states the pattern of FDI distribution as not different from the pattern of trade. The distribution was highly concentrated in only some groups of countries. The study reported that the economies that receive and make more international direct investment are richer, more advanced, and more competitive nations.

However, the report stated that location factors are not directly related to economic conditions influence FDI. The report suggested that political risk, government policy, international perception, and the regional image do.

UNCTAD said in World Investment Report 2001 that higher GDP economies reflect larger market, which always be a magnet for market seeking FDI. Moreover, the larger GDP may also reflect a larger resource available, which attracts resource-seeking FDI. Meanwhile, employment is very alike as it indicates the size of labor force, and potential market size.

The report also stated that higher export countries can attract more FDI as the greater export volume indicates the greater openness to international markets and greater competitiveness in international trade.

As a result, UNCTAD developed UNCTAD Inward FDI Potential Index, which represents a country's fundamental factors that influence inward FDI. However, some potential cannot be easily measured numerically, such as social, political, and institutional factors. Hence, the index is calculated from eight key factors. The factors are rate of growth of GDP, per capita income, share of export on GDP, telephone lines per 1,000 inhabitants, commercial energy used per capita, share of R&D expenditure in gross national income,

share of tertiary students in the population. The last factor is an un-weighted average of the seven, called "country risk". The factors are also different as among nations

Table 5: Values of and Country rankings for UNCTAD Inward FDI Potential Index during 1988-1990 and 1998-2000

Country	Value		Global Rank		Group Rank	
	1988-1990	1998-2000	1988-1990	1998-2000	1988-1990	1998-2000
China	0.234	0.251	59	84	5	7
Hong Kong	0.441	0.589	21	13	2	1
Indonesia	0.203	0.189	73	110	6	8
Korea	0.449	0.558	13	18	1	2
Malaysia	0.252	0.368	52	40	3	3
Philippines	0.139	0.265	111	78	7	6
Thailand	0.235	0.298	57	61	4	4
Vietnam	0.134	0.277	115	71	8	5

Source: UNCTAD

Meanwhile, UNCTAD Inward FDI Performance Index represents the attractiveness of a country for FDI, taking country's size into consideration. It is calculated by dividing a country's share in global FDI flows by its GDP share in global GDP. The higher ratio indicates the greater performance a country plays in the global FDI community. Neutralizing GDP allows us to know the relative performance of a country easier. The variation of the index among countries verifies the difference of attractiveness among locations.

Table 6: Values of and Country rankings for UNCTAD Inward FDI Performance Index during 1988-1990 and 1998-2000

Country	Value		Global Rank		Group Rank	
	1988-1990	1998-2000	1988-1990	1998-2000	1988-1990	1998-2000
China	0.9	1.2	61	47	6	5
Hong Kong	5.4	5.9	4	2	1	1
Indonesia	0.8	-0.6	63	137	7	8
Korea	0.5	0.6	93	87	8	6
Malaysia	4.4	1.2	8	44	2	4
Philippines	1.7	0.6	39	89	4	7
Thailand	2.6	1.3	25	41	3	3
Vietnam	1.0	2.0	53	20	5	2

Source: UNCTAD

The table shows that Hong Kong has been standing as the most performing well nation in the studying group while Indonesia and Korea do not perform very well. However, when UNCTAD Inward FDI Potential Index are studied, the result shows that Korea in fundamentally strong nation. It is similarly strong as Hong Kong. Hence, there must be some significantly different characteristics between the two nation that make Korea cannot attract as much Inward FDI as Hong Kong. The countries' characteristics will be described later in this chapter.

Table 7: Ranking Comparison between UNCTAD Inward FDI Performance Index and UNCTAD Inward FDI Potential Index during 1988-1990 and 1998-2000

Country	Performance Index		Potential Index	
	1988-1990	1998-2000	1988-1990	1998-2000
China	6	5	5	7
Hong Kong	1	1	2	1
Indonesia	7	8	6	8
Korea	8	6	1	2
Malaysia	2	4	3	3
Philippines	4	7	7	6
Thailand	3	3	4	4
Vietnam	5	2	8	5

Source: UNCTAD

The study of UNCTAD shows differences in country's performance and potential. Some countries may perform better than potential as they pursue special regulatory regimes concerning FDI. They may offer growth outlook, skilled labor, natural resources, advanced infrastructure, financial support, or strong suppliers. These factors are discussed as a part of location advantage.

Furthermore, UNCTAD says in World Investment Report 2002 that foreign direct investment expansion is also driven by a contribution of policy liberalization, rapid technology growth, and the increasing competition.

Policy liberalization, refer to those policies concern opening up national markets and allowing all kinds of FDI and non equity investment, encourages MNEs to invest in the host nation as the entry can be done easier. Moreover, it allows foreign firms to choose mode of entry that fits them the best.

UNCTAD also stated that a rapid change in technology can also reduces transactional cost of affiliates. When technology is transferred, production can follow. Costs and risks of foreign affiliates are reduced and shared when they invest cross-border. Meanwhile, the increasing competition among firms forces MNEs to produce efficiently, or reduce its unnecessary cost. Some then choose to move their plant to a lower cost location to acquire higher production efficiency. Some are forced to invest and sell their products aboard as a new market.

Summing up, government policies toward FDI are important for MNEs to consider if they should invest directly in a host country. Country's competitiveness, cost efficiency, market structure, national economic environment, and global accessibility also determine inward FDI. (UNCTAD, 2002)

Besides those factors, UNCTAD reaffirms that the size of the host economy is positively related to the inward FDI. However, the organization stated that clustering has become a key influence too. The geographic concentrations of related industries, specialized service, research and development advancement, and so on are taken into firms' consideration as well. Hence, it means that, not only do macro-economic factors determine inward FDI, non-economic factors and micro, industrial level, influent the flow.

1.2.1 Other Theoretical Studies

Various studies concerning FDI determinants have been carried out since 1960s. Most studies are based on Eclectic Theory, and concentrate in Location Advantage. Studies affirmed that market size hypothesis, which is normally measured by a country's GDP, is always valid. Meanwhile, cost hypothesis, which includes labor cost, cost of capital, and inflation are found significant in many cases. Other factors, such as political risk, incentives, are studied as well.

Market size Hypothesis

Market size hypothesis assumes that the host country's economic size determine the value of investment inflow to the country. Many proxies are studied including GDP, GNP, Per Capita Income, and population. By many studies, market size hypothesis was found as a significant determinant.

Scaperlanda and Mauer (1969) analyzed three hypotheses on FDI; market size hypotheses, growth hypotheses and trade barrier hypothesis in the European Economic Community (E.E.C.) for the 1952-1966, using the least-square regression technique. They reported sixteen regressions that attempt to test and discriminate between these three hypotheses, and they concluded that only the size of the market hypothesis could be supported statistically.

Green and Cunningham (1975) and Dunning (1980) found the significant relationship between United States foreign direct investment (both

overall and manufacturing only). Meanwhile, Korbrin (1976) found a significant relationship between United States foreign direct investment and the country's GDP and population. Korbrin also found that the growth of GNP and GNP per capita are significant determinants of foreign direct investment in both all countries and developing countries.

Root and Ahmed (1979) and Schneider and Frey (1985) analyzed developing countries' foreign direct investment determinants. The studies found the positive relationship of GDP per capita. Root and Ahmed also found that the host country's GDP growth determined the country's attractiveness for inward foreign direct investment. Meanwhile, the study of absolute GDP was not found significant.

Besides, Lunn (1980) used annual data from 1957-1970. His study was based on assumption of the firm's profit maximization, subjected to economic and political constraints. The results showed that market size hypotheses are still valid. He used two proxies for test of growth hypothesis: $G1 = Y_t - Y_{t-1}$ and $G2 = Y_{t-1} - Y_{t-2}$ and found that the growth rate in the most recent year (G1) is significant positively related to the American FDI in the E.E.C. However, the one year lagged (G2) is significantly negatively related.

Torrisi (1985) analyzed time-series data to explain the determinants of all FDI and the United State FDI in Columbia for the period 1958-1980. Again, market size (GDP) is proved to be a significant positive determinant of FDI, while the growth rate has insignificantly positive sign.

Hultman and McGee (1988) studied about FDI in the United States between 1970 and 1986 and found GNP to be a significant determinant of investment, both in all industries and found that four separates sectors.

Papanastassiou and Pearce (1990) found a persistently positive relationship between United Kingdom manufacturing foreign direct investment, as a position of the host country, and the country GNP per capita. The relationship was significant for five of eight industries tested, as well as the manufacturing overall.

Wang and Swain (1995) studied determinants of FDI in transforming economies –Hungary and China during 1978-1992. They found that host country market size is positively related to the FDI. Meanwhile, cost of capital and political disability is negatively related. Average growth rate is also found to be a determinant of FDI in Hungary, but not in China, while the effect of tariff is ambiguous. The political disability is found to negatively affect the FDI.

From Dunning and Rajneesh (1996), we are able to conclude that there are several stages of explaining a country's status of FDI. Those concern the level of proprietary asset, wealth, and market size of both home and host country, which are somehow well described by the countries' GDP. The high GDP country is likely to have positive net FDI outward whereas the low's one tends to be negative.

In Thailand, Nidhiprabha's study (1994) supports the market size hypothesis and present political instability hypothesis. Nidhiprabha tested the determinants of FDI in Thailand by OLS, using the logarithmic formulation, during 1970-1990. The study revealed that market size hypothesis and political stability supports the FDI inflows.

Moreover, Pupphavesa et al. (1994) constructed a model for FDI determinants in Thailand during 1970-1990 and found a significant relationship between FDI inflows and GDP. Moreover, the studied found that

the exchange rate of Japanese Yen per U.S. Dollar, which represents the rising cost of production, which may imply location advantage, in Japan and the NIEs are positively and negatively related to FDI, respectively. However, tariff barrier and infrastructures were not found significant.

In summary, market size hypothesis is widely found as a significant determinant of foreign direct investment. The results were tested by various groups of countries. However, it is noticed that in different circumstance, different market proxies are applied. In some cases, absolute GDP, or GNP was found significant. Meanwhile, GDP growth, or GDP per capita were found significant instead.

Cost Hypothesis, Export Advantage, and Exchange Rate Variation

In addition to market size hypothesis, production cost, hypothesis was also studied as determinants. Several cost proxies, such as inflation rate, labor cost, and cost of capital, were studied if they determine FDI. Some studies affirmed the validity of the hypothesis. However, some did not. In addition, export price, and the deterioration of the country's exchange rate were studied as well.

Even by studying by Owen (1982) and Gupta (1983) reported that the factor was never found significant, Caves (1974) reported that the relative labor cost of United States and that of Canada negatively related to foreign direct investment. Moreover, Caves, Porter, and Spence (1979) and Suanders (1982) found that the relative unit labor costs of Canadian and United States

production workers was a significant determinant of the industry structure of foreign direct investment in Canada.

In United Kingdom, Buckley and Dunning (1976) studied the comparative wage bill productivity (gross output per a pound sterling) in the United States and United Kingdom. The study concluded that the factor was insignificant.

Agodo (1978) studied 33 United States companies investing in 20 African countries, and found that the lower cost of African labor did not significantly determine FDI.

Swedenborg (1979) studied the relationship between foreign direct investment and the average wage of wage workers in firms' foreign manufacturing subsidiaries relative to that at home. The fact that the study found the positive significant relationship between the factors reflects that the high wages imply high productivity of skilled labor. The study then concluded that the high productivity of skilled labor was such a location advantage attracting FDI. (UNCTAD, 1992)

However, Schneider and Frey (1985) found a significant relationship between foreign direct investment and wage costs in 54 developing countries.

By contrast, Papanastassiou and Pearce (1990) found that wage per head of worker divided by a measure of productivity was inconsistently related to FDI. Moreover, the relationship was not reported significant.

Torrisi (1985), again, included a trade balance variable equal to total exports minus total imports of Columbia lagged one year. For all FDI, the variable is found to be consistently negative, indicating that a deterioration of (improvement in) the trade balance is associated with an increase (decrease)

in foreign direct investment in Columbia in the following period. For the American FDI, the relationship is also negative but does not approach significance. Finally, Torrisi considered a dummy variable to take account of the creation of the Andean Common Market. This dummy is found to have persistently negative sign though insignificant. This result is interpreted that while the market growth through effects of regional integration might have encouraged FDI, some of the other consequences of the Andean Pact repelled it. As a result, he concluded that he deterioration of (or improvement in) the trade balance is associated with an increase (decrease) in foreign direct investment in Columbia.

Besides the finding that GNP to be a significant determinant of investment, both in all industries and found that four separates sectors, Hultman and McGee (1988) studied about FDI in the United States between 1970 and 1986 and found that the value of the U.S. dollar is significantly positive related to FDI in the United States in all cases. The positive result is hypothesized that anticipations are important in the investment decision; thus, an appreciating (depreciating) dollar leads to anticipate gains (losses) such that FDI increases (decreases). By contrast, a negative sign could happen from the fact that if the dollar appreciates (depreciates), investment in the United States costs more (less). So, he concluded that the value of the U.S. dollar is significantly positive related to FDI in the United States in all cases. The positive result is hypothesized that anticipations are important in the investment decision; thus, an appreciating (depreciating) dollar leads to anticipate gains (losses) such that FDI increases (decreases). By contrast, a

negative sign could happen from the fact that if the dollar appreciates (depreciates), investment in the United States costs more (less).

Lucas (1993) examined the determinants of FDI during 1960s-1990s in seven East and South-East Asia countries. He derived demand for foreign capital according to profit maximizing hypothesis and multiple product monopolists. Except in Taiwan, his study found that FDI inflows have been responsive to the labor cost and cost of capital negatively. However, it positively responded to the export price.

Bajo-Rubio and Sosvilla-Riveo (1994) also studied the determinants of FDI in Spain during the period of 1964-1989, by using co integration analysis. They found that there is a long run relationship between total gross FDI inflows and several macroeconomic variables, which are the level of real GDP, the rate of inflation, the level of trade barriers, and the lagged foreign capital stock. Also, when splitting total inward FDI into the segment of manufacturing and non-manufacturing, they found that the main determinants are real GDP, inflation, the cost of capital, and the labor unit cost.

According to various studies, the paper revisits those significant determinants; GDP, cost of labor, cost of capital, and exchange rate, for example. However, the time horizontal for study is adapted to cross section study of the year 1996. Most of the times, market size hypothesis is reported as a significant determinant of FDI. Meanwhile cost hypothesis did not that much supported. Hence, it is interesting to revisit the East Asian foreign direct investment determinants. This paper then is conducted to reaffirm if the variables are valid for the eight sampled countries. The variables are also used as a reference for further analysis, 1996-2000, as well.

2. Gravity Model

Gravity model is a very well known instrument explaining bilateral intra-trade theory. It bases on a physical science about gravity force of two objects. In Science, it is theorized that the attraction of the tow objects is positively related to the masses of the objects. On the other hand, the attraction decreases as the distance between the objects is enlarged. In economics, bilateral trade flow is positively related to the sizes of the two countries. In contrary, it is negatively related to the distance between the countries. (Timbergen, 1962) Various studies has confirmed the validity of the model; for instance, Linnermann(1966), Gruber and Vernon(1970), Leamer and Stern(1970).

In international trade theory, gross bilateral trade flows of countries are explained commonly using the gravity equation:

(1) $\quad T_{ij} \quad = \quad A Y_i Y_j / D_{ij}$

Where;

T_{ij} is defined as the value of trade flows between the two countries.

A is a constant.

Y_i is the market size of country I (GDP, or GNP)

Y_j is the market size of country j (GDP or GNP)

D_j is the distance between the two countries

The home country economic size is tropically positively related to the trade flow since the bigger size shall increase availability of goods to export. Similarly, the coefficient of the host country economic size is expected to be positive since the size shall indicate demand for imports. However, the coefficient estimated for the home country's per capita income can be either positive or negative. It should be positive if the country export relatively large amount of capital intensive products. The sign should be negative if the country export large amount of labor intensive products. For the host country's per capita income, positive sign should be previewed if its import products are luxury goods. The negative sign is expected if the products are inferior goods. In contradiction, distance between the countries is expected to be negative since it shall be a very good proxy for transport costs.

This paper aims to investigate if the distance between the two countries has any influents on inward FDI. Hence, the variable is be added into the eclectic model.

Summary

The study is conducted by applying Eclectic Model and Gravity Model as foundations. The eclectic theory is such a recognized model used in describing the direct investment flows between two nations. The theory explains broadly why international investment incurs. Meanwhile, Gravity model is applied to investigate if the distance between the investing country and the host determine the flows.

Besides the foundations, studies of United Nations Conference on Trade and Development (UNCTAD) and previous studies are referred as well. UNCTAD stated that government policies and national environment affect the flows. Non-economic environment such as political stability, international perception, and country's image can affect inward FDI as well. UNCTAD reaffirms that the size of the host economy is positively related to the inward FDI. Meanwhile, other studies found that market size hypothesis, labor cost, capital cost, inflation and political stability are significant determinants in some cases, which is consistent with many studies.

Hence, this research aims to investigate the determining factors for inward FDI. Firstly, the study investigates if Dunning's Eclectic Model, concerning proprietary advantage and location advantage, is valid in the case of East Asian nations. Also, the study would investigate if Gravity Model is another model that determines inward FDI in the region.