

## Economic and financial determinants of foreign investments: Competitiveness from a developing economy perspective<sup>1</sup>

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Globalisation has increased the significance of foreign direct investment or FDI as a source of long-term capital that, under the right policy environment, provides numerous benefits to the host countries. This research seeks to analyse the investment potentials of a developing economy by determining the economic and financial variables that account for the decision of investors in locating their investments. This study investigates the relationship between net FDI inflows for the period 1996-2014 and market size, infrastructure and labour variables, together with stock market development and real interest rate, using multiple regression analysis. The results suggest that market size, transport infrastructure, labour costs and real interest rate are significant and positive determinants of FDI, while telecommunications infrastructure is significantly but negatively correlated to FDI inflows. Surprisingly, labour quality indicators showed mixed results, while stock market development is negatively correlated albeit statistically insignificant to FDI flows for the study period.

**Keywords:** FDI, OLI framework, competitiveness, developing economy.

**JEL codes:** F21, M48.

### Introduction

The recent decades have witnessed the growing integration of the world's community of nations, a phenomenon better known as globalisation. Advances in technology, the expansion of international trade, and greater financial flows in the economies are seen as among the foremost drivers of globalisation (Penalver 2002; Pennisi 2012). Foreign direct investment or FDI has grown in significance during the last decades and has been expanding at a faster rate than trade (Isayev 1998; Leitao 2012). The United Nations Conference on Trade and Development (2015) reported that global FDI inflows had reached \$1.23 trillion in 2014 and were projected to rise to \$1.4 trillion in 2015, \$1.5 trillion in 2016 and \$1.7 trillion in 2017.

Foreign direct investment is the most stable and least volatile among the three main sources of outside capital, the other two being equity market and international

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lending (Balboa–Medalla 2006; Walsh–Yu 2010). Since FDI is mostly embodied in plant, equipment, and workforce, these inflows are for the long term and cannot be easily withdrawn. These commitments do not “flee with the rapidity of stock market investors or commercial bank lenders” (Moran 1999. 2).

Among the developing economies, the Philippines has not been excluded from the abundant flow of global FDI. The Bangko Sentral ng Pilipinas (2015) reported that, in 2014, the country’s net FDI inflows reached an all-time high of US\$ 6.2 billion, a 65.78 percent increase from the US\$ 3.7 billion registered in 2013. The figure, however, pales in comparison to the net FDI flows received by its neighbouring countries in the Association of Southeast Asian Nations (ASEAN). In the same year, net FDI inflows to Singapore amounted to US\$ 67.5 billion; to Indonesia, US\$ 26.3 billion; to Malaysia, US\$ 10.6 billion; and to Vietnam, US\$ 9.2 billion. Although Thailand fared rather poorly in 2014, receiving only US\$ 3.7 billion, it nonetheless garnered significant FDI inflows in precedent years, i.e. US\$ 12.9 billion and US\$ 15.8 billion in 2012 and 2013, respectively (World Bank 2016).

The primary goal of this study is to determine which country-specific economic and financial variables account for the decision of foreign investors to locate their investments in the Philippines for the period 1996 to 2014. Specifically, the study aims to achieve the following objectives: (1) to determine the relationship of net FDI flows and *the selected economic variables*, i.e. market size, infrastructure, cost of labour and quality of labour, *and financial variables*, i.e. stock market development and real interest rate, and (2) to assess which of these variables require improvement for the country to better compete with neighbouring ASEAN countries in attracting foreign direct investment.

### **Literature review and conceptual framework**

This chapter is divided into two main parts: first, the discussion of the economic and financial variables in country location choices of foreign investors and, second, the discussion of the conceptual framework.

#### ***Literature review***

A number of studies have been made in the attempt to understand the economic, financial, social and political variables that account for the FDI location choices of foreign investors. The difficulty in precisely identifying the exact variables that affect a firm’s decision to geographically locate a particular

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investment may in part be credited to the fact that there are different types of foreign direct investments, all of which are affected by different factors (Lim 2001). Nonetheless, the large amount of literature compiled under this area of study reveals that, despite the many different variables considered by different authors, certain determinants of FDI are found to be ubiquitous in most empirical models. Among these recurring variables are economic factors such as the size of the domestic market, infrastructure, cost and quality of labour, and financial factors such as stock market development and real interest rate.

#### *Market Size*

The size of the host market, as measured by the Gross Domestic Product (GDP), is foremost among the most studied determinants of FDI as indicated by its presence in a vast array of empirical research studies (Aldaba 1994; Benacek et al. 2000; Leita0 2012). The pervasiveness of this variable may be attributed to its deep and robust foundations in theory, particularly in literature involving the fundamental motivations of FDI, i.e. the underlying reasons why a firm would resolve to locate its production on foreign shores and hence become multinational (Lim 2001).

The conventional view on the motivations of FDI posits two main impetuses for FDI to occur, the first of which is *market-seeking* (Shatz–Venables 2000). Market-seeking happens when “multinational enterprises invest in a foreign country to exploit the possibilities granted by markets of greater dimensions” (Franco et al. 2008. 7).

For this reason, FDI that seeks to serve local markets is called market-seeking FDI. This type of FDI is also called horizontal FDI since it involves “building duplicate plants in a foreign location to supply the market there” (Lim 2001. 11). Moreover, since the emphasis of market-seeking FDI is on local production and local sale, the factors that are most apposite to it are “market size, market growth and consumption ability” (Na–Lightfoot 2012. 265). Indeed, access to a large domestic market is especially critical to market-seeking FDI, since it is essentially ‘import-substituting’ rather than ‘export-oriented’ (Aldaba 1994. 52).

#### *Infrastructure*

Physical infrastructure is another key determinant of FDI. It can be concluded that there are three dimensions in physical infrastructure based on the studies of Aldaba (1994), Pernia et al. (2005) and Franco et al. (2008). The first dimension is transport infrastructure, which includes roads, bridges, railways, seaports, airports and related transport structures and facilities. The

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second dimension involves communications infrastructure, which is classified primarily into telecommunications structures and facilities for the purpose of transmission and reception of information via electronic means or otherwise. The third dimension includes energy or power (electricity), water and other utilities and services as well as the corresponding structures and facilities involved in the generation, transmission and distribution of said services. An effective transport infrastructure network is an absolute must, as “effective modes of transport ... enable entrepreneurs to get their goods and services to market in a secure and timely manner and facilitate the movement of workers to the most suitable jobs” (WEF 2016. 307). The presence of a solid telecommunications network with an extensive coverage “allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that businesses can communicate and decisions are made by economic actors taking into account all available relevant information” (WEF 2016. 308).

In a survey published in *The Global Competitiveness Report 2014-2015*, when business executives were asked to rank a list of 16 factors for doing business from the most problematic to the least, the inadequate supply of infrastructure (WEF 2016) was ranked the second most problematic factor for doing business in the Philippines. The report ranked the infrastructure in the Philippines 91<sup>st</sup> among 144 economies that were included in the said report. Particularly worrisome are the conditions of the country’s transport infrastructure: the quality of roads was ranked 87<sup>th</sup>, the quality of railroad infrastructure – 80<sup>th</sup>, the quality of port infrastructure – 101<sup>st</sup> and the quality of air transport infrastructure – 108<sup>th</sup>. Other aspects of the nation’s infrastructure network fared equally poorly; with regards to telephony, mobile penetration in the country was ranked 86<sup>th</sup>, and fixed-line telephone density, 113<sup>th</sup>. The quality of electric supply in the country, ranked 87<sup>th</sup>, is also a source of great concern.

#### *Cost of Labour*

The conventional view on the motivation of FDI posits two main reasons for the decision of firms to locate firm production on foreign shores. The first reason is to seek for new markets, otherwise known as *market seeking*, as presented in the preceding section. The second is to seek for certain types of resources “that are not available at home, like natural resources or raw materials, or that are available at a lower cost, such as unskilled labour that is offered at a cheaper price with respect to the home country” (Franco et al. 2008. 7). This is known as *resource seeking*. Therefore, FDI that aims to acquire lower cost inputs is

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known as *resource-seeking FDI* (Shatz–Venables 2000). It is also called vertical or production cost-minimising FDI since it involves “slicing the vertical chain of production and relocating part of the chain in a low-cost location” (Lim 2001. 11). The term “outsourcing” which Moran (1999. 283) described as “shopping around for cheap inputs” may be used in relation to resource-seeking FDI.

One of the primary reasons for resource-seeking FDI is to pursue firm production in a foreign country where labour is offered at a lower cost relative to the firm’s home country. This has resulted in the scenario known as “race to the bottom” where competing countries, in an attempt to enhance their appeal to foreign investors, offer “ever greater tax breaks and ever weaker regulations” (Kucera 2006. 31) and, thus, labour costs have often been driven as low as possible relative to rival countries.

The relationship between labour costs and FDI inflows has been the subject of a large strand of empirical literature. Indeed, one will find that a review of extant literature will not so easily yield uniform conclusions; while conventional wisdom would argue for the existence of a negative relationship between labour costs and FDI inflows, the results of several empirical works indicate that the relationship between the two may not be so linear after all, and that the assumption of a linear relationship may be flawed. The succeeding discourse summarises the key findings of several scholars.

Cushman (1987) theoretically established the negative relationship between wage and FDI in a neoclassical framework. His theoretical model indicated that “a rise in the host country wage or fall in the source country wage discourages FDI” (Cushman 1987. 183). To lend empirical support to the then largely theory-based assumption of the negative relationship between labour costs and FDI, he used time-series analysis on FDI flows between the U.S. and five other countries. Estimation results revealed that, indeed, rising wages encouraged FDI outflows and discouraged inflows.

Feenstra and Hanson (1997) discovered that low labour costs had a substantive effect on U.S.-owned assembly plants in Mexico called *maquiladoras* that were set up precisely to take advantage of low wage costs, affirming the negative correlation between labour costs and FDI inflows.

In contrast, Harrison (1994) challenged the assumption posited by conventional wisdom that FDI and labour costs are inherently negatively correlated. While critics argued that “foreign investors leave the United States and other developed countries in search of lower wages ... (and) take advantage of weak labour laws to pay very low wages under abysmal working conditions”

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(Harrison 1994. 9), the findings of her extensive research actually pointed to the contrary, i.e. “foreign-owned firms generally pay higher wages than domestic firms, leading to an increase in overall wages in the host country” (Harrison 1994. 9). In the United States, for instance, she found out that foreign firms “pay 10 percent to 20 percent higher wages than domestic firms; in developing countries like Mexico and Venezuela, the wage gap is even larger – multinationals pay as much as 30 percent more than domestic firms” (Harrison 1994. 9).

Helldin (2007) analysed the regional determinants of FDI in the eastern coastal provinces of China. Contrary to conventional assumptions, the results of her econometric analysis indicated a positive relationship between wage levels and FDI inflows. However, she noted that this occurred only in the Chinese provinces where education levels, a proxy for labour quality, were found to be high relative to the wage levels. In areas where recorded education levels were found to be low, wage increases tended to discourage FDI inflows.

#### *Quality of Labour*

Arguably, human capital is the most vital among all inputs to any activities of a firm, not the least for multinational enterprises. The findings of numerous empirical works of various authors provide affirmation that a well-educated, highly skilled, fully trained labour force is readily sought after by foreign investors. For instance, the studies done by Mody (1998) pointed out that, instead of labour costs, it was labour quality that attracted Japanese FDI into certain Asian locations. Similarly, Fung, Iizaka, Lee and Parker (2000) found that labour quality, as measured by educational attainment, was a significant factor in accounting for U.S. and Japanese FDI in Chinese provinces.

Nonnenberg and Mendonca (2004) discovered that the level of schooling, a proxy used for quality of labour, was a positive and significant determinant of FDI inflows to 38 developing countries for the period 1975 to 2000. They inferred that the greater part of FDI flows into developing countries “has been directed towards activities that are relatively knowledge-intensive” and that policies devised towards “increasing the level of education must be pursued” (Nonnenberg–Mendonca 2004. 6).

Na and Lightfoot’s econometric work indicated that labour quality, measured using the total number of primary, secondary and tertiary schools, had a positive impact on FDI inflows to 30 Chinese regions in the year 2002. The authors then pointed out the worrisome state of human capital development in China and called for measures to address this pressing issue.

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Majeed and Ahmad (2008) intended to measure the effects of human capital development on FDI inflows to developing countries. To measure human capital development, they chose two indicators, namely health expenditures and illiteracy rate. They employed a fixed effects model on panel data for a sample of 23 developing countries, the Philippines included, for the period 1970 to 2004. Econometric results indicated a highly significant and positive relationship between health expenditures and FDI inflow. Illiteracy, meanwhile, was found to be negatively associated with FDI inflows, although the coefficient was statistically non-significant.

#### *Stock Market Development*

Two diverging opinions exist on the linkage between stock market development and FDI. Academic scholars like Claessens, Klingebie and Schmukler (2001) noted the positive correlation between stock market development and FDI. A high degree of stock market development reflects the presence of characteristics that are also conducive to FDI and therefore looked at favourably by foreign investors. This positive view is dominant among most scholars, as reflected in numerous empirical works. Some of these are discussed in the succeeding paragraphs.

Nazir, Nawaz and Gilani (2010) discovered that both stock market development and FDI proved contributory in sustaining economic growth in Pakistan. They therefore proposed that the development of stock markets should be concurrent with the industrial and manufacturing growth of the country.

Arcabic, Globan and Raguz (2013) found out that the upward “movement on the Croatian stock market, measured by trading volume” (Arcabic et al. 2013. 122), was a positive and significant short-run determinant of FDI flows in Croatia. According to them, this is because “events on the stock market signalise the vitality and investment climate of the domestic market to foreign investors” (Arcabic et al. 2013. 110). Moreover, they observed that, in the short run, FDI significantly reacted to shocks in the stock market, albeit with an apparent lag.

On the contrary, there are scholars, like Kucera (2006), who argue that stock market development and FDI are inherently inversely related. They theorise that, in countries where the development of the stock market is not aggressively pursued, FDI is seen as the better alternative amidst the existence of weak institutions, capital risks and financial underdevelopment. By engaging in FDI, firms are able to overcome the difficulties of investing through stock markets, therefore FDI is hypothesised to be greater in countries with underdeveloped stock markets.

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### *Real Interest Rate*

There is a general consensus among researchers that a higher interest rate prevailing in the host country relative to the foreign investors' home country attracts greater inward FDI flows, since cost advantages may be realised on the part of the investors who derive their financing from home countries due to higher return on capital. Various research studies, like Faroh and Shen (2015), Cevis and Camurdan (2007), Majeed and Ahmad (2008) and Kurihara (2012), validated this premise in their empirical works.

For instance, Cevis and Camurdan (2007) found out that real interest rate, an indicator of macroeconomic policy, was a positive and significant explanatory economic variable of FDI inflows to 17 developing countries and transition economies for the period 1989 to 2006, while Majeed and Ahmad (2008) found the impact of real lending interest rate on FDI flows to 23 developing countries for the period 1970 to 2004 to be positive and significant. Drawing from this, they posited that FDI flowing into the said countries was financed in the home country; thus, higher interest rates prevailing in the host country would give foreign investors cost advantages over domestic firms and ease the entry and establishment of their investments in the host market.

Lastly, Kurihara (2012) sought to examine the relationship between certain macroeconomic variable determinants and FDI in ASEAN countries for the sample period 2002 to 2011. The author found out that interest rates had a strong positive and significant effect not just on FDI flows into the countries in the region, but also on the volatility of said flows. The author suggested that the results might indicate that "higher banking competition (spreads are small) could be an element of stabilisation in FDI", but that "the development of domestic banking system does not necessarily achieve more stable FDI" (Kurihara 2012. 15).

### ***Conceptual framework***

The framework of the study uses the eclectic paradigm of international production where the formalisation of FDI determinants is evident. This paradigm, also known as the *OLI framework*, has "remained the dominant analytical framework for accommodating a variety of operationally testable economic theories of the determinants of foreign direct investment and the foreign activities of multinational enterprises" (Dunning 2000. 163).

OLI stands for the three categories of advantages or sub-paradigms that are prerequisites to FDI. The first of these is the *ownership (O) specific advantages* or the advantages that a firm must have and that will enable it to gain a competitive



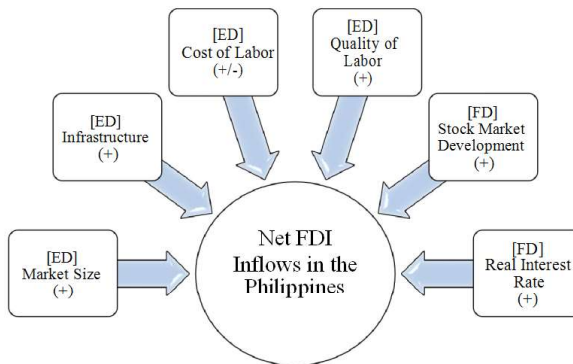
edge over other firms, in particular the indigenous firms of the country or region where the investment will be made. These firm-specific advantages must allow the firm to “overcome the additional costs of foreign production such as the costs of dealing with foreign administrations, regulatory and tax systems, and customer preferences” (Lim 2001. 10). The second category of advantages is the *location (L) specific advantages*. Supposing that the first condition is satisfied and the firm indeed has in its possession just such an advantage or advantages as described above, it must then resolve where it can best “augment or exploit its O specific advantages by engaging in FDI” (Dunning 2000. 164). Location-specific advantages would include economic factors such as the “distribution of natural endowments, input prices, labour quality and productivity and infrastructure” (Moran 1999. 2), “quantitative and qualitative factors of production, costs of transport, telecommunications, market size” and social factors such as “distance between the home and host countries, cultural diversity, attitude towards strangers, etc.” (Denisia 2010. 108). It also includes political factors such as policies, laws, rules and regulations that affect FDI. The third category of advantages is the *internalisation (I) advantages*. Supposing that the firm has secured possession of some O specific asset that will enable it to gain an edge over other firms, it must thence decide whether it will use or exploit this O specific asset itself, i.e. internalise it or simply sell or lease and license it to other firms. If the firm evaluates both options and finds that it is more advantageous for itself to internalise this asset, then the more likely it is to use and exploit this asset itself in combination with at least some factors located abroad and hence engage in FDI rather than license the right to do so to other firms (Dunning 2000; Lim 2001; Denisia 2010). Thus, taken together, the OLI paradigm “explains *why* (ownership advantage) and *how* (internalisation advantage) a firm decides to become a multinational and *where* (location advantage) it is more likely to invest” (Franco et al. 2008. 7).

Of the three sub-paradigms, the *location-specific advantages* are the most relevant in understanding a firm’s decision to *geographically* locate an investment. The decision of the firm on where to locate its investment is primarily dictated by prevailing conditions and inherent characteristics of potential sites for foreign production. Intuitively, the firm will opt for the country or region that is most favourable to the type of FDI it seeks to make. But because countries and regions each possess varying characteristics and attributes, it is critical for a firm to evaluate the advantages and disadvantages beforehand and assess the risks and

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benefits of locating in a particular country or region over another before engaging in FDI. Such an appraisal entails the thorough analysis of the factors present in that country to determine if said factors would be to the benefit, or ruin, of the firm. What makes a climate conducive to FDI is determined by the presence or absence of a plethora of factors, among which are economic and financial variables.

Drawing from the second sub-paradigm of Dunning's OLI framework, i.e. the locational advantages sub-paradigm, the following conceptual framework is devised (Figure 1).



*Source: Author's illustration based on Dunning's (2000) location-specific variables*

**Figure 1: Economic and financial determinants of net FDI inflows in the Philippines, 1996-2014**

In the case of the Philippines, what economic and financial variables account for the decision of foreign investors to locate their investments in the country? More specifically, what are the economic and financial determinants of net FDI inflows to the Philippines from 1996 to 2014?

This framework posits the 'locational advantages' of the Philippines that foreign investors may find conducive to their enterprises. Specifically, this model outlines the independent variables, i.e. economic variables (market size, infrastructure, cost of labour and quality of labour), and financial variables (stock market development, real interest rate), as 'potential' determinants of net FDI inflows (the dependent variable) in the Philippines for the period 1996 to 2014. [ED] and [FD] indicate 'economic determinant' and 'financial determinant', respectively. The relationship of the independent variable to the dependent variable

is indicated by the plus or minus sign enclosed in parentheses; (+) indicates a positive relationship between the independent variable and the dependent variable, and (-) indicates a negative relationship between the independent variable and the dependent variable. The corresponding relationship between economic and financial variables and FDI has been drawn from the analysis of theoretical arguments and empirical findings in the review of extant and relevant literature.

### Methodology

The study uses annualised data for the sample period, 1996 to 2014. Data for the variables and their corresponding measures or proxies are gathered from various institutions. Multiple regression analysis is employed to determine the relationship of FDI flows with the economic and financial variables that were discussed earlier. The statistical software packages *gretl* (Gnu Regression, Econometrics and Time-series Library) 2016a and *SPSS Statistics v20* are both used for data analysis.

Based on the evaluation of theoretical justifications and empirical evidences from the review of extant literature on the economic and financial determinants of foreign direct investment, the following econometric relationship is proposed:

$$FDI_t = (Market\ Size_t, Infrastructure_t, Cost\ of\ Labour_t, Quality\ of\ Labour_t, Stock\ Market\ Development_t, Real\ Interest\ Rate_t) \quad (1)$$

Substituting the appropriate proxies and their respective signs for the variables in equation (1), the following equation is derived:

$$FDI_t = \alpha_0 + \beta_1 GDP_t + \beta_2 ROAD_t + \beta_3 TCOMM_t - \beta_4 WAGE_t + \beta_5 NERES_t + \beta_6 CSRES_t + \beta_7 HEEG_t + \beta_8 STOCK_t + \beta_9 RIR_t + \mu_t \quad (2)$$

where:

t = year, 1, ... n;

$\alpha$  = constant;

$\beta$  = regression coefficient;

$\mu$  = error term;

+/- = the relationship of the independent variable to the dependent variable: (+) for positive relationship and (-) for negative relationship;

FDI = foreign domestic investment, net inflows (in current US \$ million);

GDP = gross domestic product at market prices (in current US \$ million);

ROAD = total length of existing national roads of all surface types (in kilometres);

TCOMM = Internet users and mobile cellular subscriptions per 100 people;

WAGE = Real minimum daily wage rate;

NERES = net enrolment rate in public and private elementary and secondary schools (in percent);

CSRES = cohort survival rate in public and private elementary and secondary schools (in percent);

HEEG = total number of higher education enrollees and graduates (in thousands);

STOCK = total value of stocks traded (percent of GDP);

RIR = Real lending interest rate (in percent).

Transforming equation (2) into its log-linear form, the following model is derived:

$$\ln FDI_t = \alpha_0 + \beta_1 \ln GDP_t + \beta_2 \ln ROAD_t + \beta_3 \ln TCOMM_t - \beta_4 \ln WAGE_t + \beta_5 \ln NERES_t + \beta_6 \ln CSRES_t + \beta_7 \ln HEEG_t + \beta_8 \ln STOCK_t + \beta_9 \ln RIR_t + \mu_t \quad (3)$$

Adopting a log-linear form improves the specification of the model (Aldaba 1994) by reducing the expected heteroscedasticity (Shah 2014). Log-linearising the equation can also transform a likely non-linear relationship between the dependent variable FDI and the explanatory variables into a linear one (Wei 2005).

### Data processing and results

Before proceeding to Multiple Regression Analysis, a multicollinearity test is first performed. A bivariate analysis was performed for all variables using Pearson's  $r$ , as set up in the correlation matrix (Table 1).

**Table 1. Correlation Matrix**

ln / ln	FDI	GDP	ROAD	TCOMM	WAGE	NERES	CSRES	HEEG	STOCK	RIR
FDI	1.000									
GDP	.585**	1.000								
ROAD	.477*	.844**	1.000							
TCOMM	.291	.812**	.719**	1.000						
WAGE	.241	.587**	.659**	.867**	1.000					
NERES	-.038	-.017	.212	-.314	-.063	1.000				
CSRES	.326	.817**	.574*	.774**	.543*	-.176	1.000			
HEEG	.448	.869**	.889**	.877**	.798**	-.057	.737**	1.000		
STOCK	.571*	.345	.237	-.179	-.269	.448	.081	-.002	1.000	
RIR	-.340	-.648**	-.564*	-.635**	-.558*	.144	-.635**	-.619**	-.026	1.000

\*\* Significant at the 0.01 level (2-tailed).

\* Significant at the 0.05 level (2-tailed).

*Source: Data analysed using SPSS Statistics v22*

It was shown that no variables exhibited values greater than 0.9 which was used as the cut-off, indicating that there was little cause to believe in the

existence of multicollinearity. The model was also tested for serial correlation or autocorrelation using the Durbin-Watson test. The computed d-statistic using *SPSS v22* is 2.28 (see Table 2), which is within the desired range of 1.50 to 2.50, indicating that there is little autocorrelation (a perfect value of 2 means that there is no autocorrelation).

The results of the regression are shown in Table 2. Of the nine explanatory variables, seven are found to be statistically significant. These are GDP, ROAD, TCOMM, WAGE, NERES, HEEG and RIR. Only four variables (GDP, ROAD, CSRES, and RIR) adhered to the expected signs of their coefficients. Taken together, all nine independent variables accounted for 78.5% of variations in the net FDI flows received by the Philippines from 1996 to 2014.

**Table 2: Ordinary Least Squares Estimates**

Variable	Coefficient	Std. Error	t-statistic	p-value	Sign.
Constant	-65.343	52.489	-1.245	.253	
lnGDP	7.194	1.799	3.998	.005	***
lnROAD	11.192	5.850	1.913	.097	*
lnTCOMM	-3.294	.760	-4.333	.003	***
lnWAGE	9.317	2.143	4.347	.003	***
lnNERES	-30.605	6.138	-4.986	.002	***
lnCSRES	9.082	5.377	1.689	.135	
lnHEEG	-9.165	4.167	-2.200	.064	*
lnSTOCK	-0.610	.438	-1.392	.207	
lnRIR	1.233	.395	3.119	.017	**
R <sup>2</sup>	.906		Mean dependent variance		7.273
Adjusted R <sup>2</sup>	.785		S.D. dependent variance		.740
Durbin-Watson statistic	2.280		S.E. of regression		.343
F-statistic	7.490***		Sum squared residual		.834

\*\*\* Significant at the 1 percent level (two-tailed).

\*\* Significant at the 5 percent level (two-tailed).

\* Significant at the 10 percent level (two-tailed).

*Source: Data analysed using gretl 2016a and SPSS Statistics v22*

### *Market Size (GDP)*

The results lend affirmation to the expectation that host market size, as measured by GDP, is strongly and positively correlated to the net FDI inflows into the Philippines from 1996 to 2014, indicating that market size is a strong explanatory variable for the decision of foreign investors to locate their investments

in the country. This relationship is statistically significant at the 1 percent level. The value of the coefficient, which is 7.184, implies that, for every 1 percent increase in GDP (in current US \$ million), net FDI inflows (in current US \$ million) increase by 7.184 percent. These results are not surprising, as the positive relationship between a country's market size and the FDI flows it attracts is well supported by current theories. Also, the findings of many empirical works confirm the importance of the host market size as one of the more robust determinants of FDI. Moreover, the positive coefficient might imply that FDI in the Philippines is primarily horizontal in nature, i.e. market-seeking FDI.

*Infrastructure (ROAD, TCOMM)*

The variable ROAD, one of the proxies for the country's infrastructure, is found to be statistically significant at the 10 percent level. Its coefficient of 11.192 has a positive sign, which is consistent with the expectations of this study. Moreover, the value of the coefficient implies that, for every 1 percent increase in total national road length, net FDI inflows increase by 11.192 percent. Existing literature validates this effect. The findings of several studies noted that the effect of infrastructure improvements in drawing FDI inflows is greater in developing economies than in advanced economies where infrastructure availability and quality are already equally high (Walsh–Yu 2010). Moreover, Canning and Fay (1993: 28–29) observed that the rate of return to transportation infrastructure was “very high” in “middle-income countries” where “rapid development” was underway, “normal” for “mature developed economies” and “moderate” for “slow-growing undeveloped countries”. The implications of the sign and value of the coefficient attached to the variable ROAD certainly mirror this observation.

Meanwhile, the results for TCOMM, the other proxy for infrastructure, are surprising and unexpected and run contrary to this study's hypothesis that TCOMM, which indicates telecommunications network coverage, is positively correlated to inward FDI flows. While it is highly significant at the 1 percent level, its coefficient bears a negative sign, indicating a negative relationship between TCOMM and net FDI inflows. Its coefficient value of  $-3.294$  implies that, for every 1 percent increase in TCOMM, net FDI inflows actually decrease by 3.294 percent. Admittedly, this result is not expected. However, it is not at all invalid or illogical. In hindsight, while the variable TCOMM reflects the expansion of telecommunications network in the Philippines, *it does not account for the quality of the telecommunications services provided*. Though TCOMM measures the number of Internet users and mobile cellular subscriptions per 100 people, *it does*

*not reflect the qualitative characteristics of the actual Internet or mobile cellular services provided.* From the start, TCOMM was not intended to gauge rapid Internet speed, or stable Internet connectivity, or steady mobile cellular signals, or other such characteristics indicative of the quality of telecommunications services, things that are more important to foreign investors seeking to make FDI in the country.

*Cost of Labour (WAGE)*

The proxy WAGE, a measure of the labour cost in the Philippines, is shown to be highly statistically significant at the 1 percent level. However, its coefficient is not consistent with the expected negative sign, implying that there exists a positive relationship between WAGE and net FDI inflows in the Philippines. This means that the rising cost of labour actually attracts more investors to make FDI in the country. In fact, the WAGE coefficient implies that, for every 1 percent increase in WAGE, net FDI inflows increase by 9.317 percent. This result, however, is not unfounded. On the contrary, the review of extant literature revealed that certain theoretical arguments supported and the findings of numerous empirical works validated the thought that there existed a positive relationship between labour costs and inward FDI flows.

Moreover, the positive relationship of wage costs and FDI in the Philippines might suggest a high quality of labour prevailing in the country. Indeed, wage costs appear to capture other indicators of a high-quality labour force available in the country that were possibly not captured by the education-related variables NERES, CSRES and HEEG.

*Quality of Labour (NERES, CSRES, HEEG)*

The results for education indicators, which are used as proxies for labour quality, are found to be unexpected and certainly perplexing. Both NERES and HEEG, though significant at the 1 percent and 10 percent levels, respectively, are shown to have negative coefficients, implying that both increasing net enrolment rates in the elementary and secondary levels of basic education and total number of higher education enrollees and graduates actually lead to decreasing net FDI inflows. Meanwhile, while CSRES had the hypothesised positive coefficient, it was nevertheless not statistically significant, suggesting that it does not at all account for the decisions of foreign investors to locate their investments in the Philippines. Obviously, these results are counter-intuitive; indeed, they do not only run contrary to this research's expectations, but also against conventional wisdom, theoretical justifications and empirical evidence in the majority of extant

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related literature. There are, however, other research studies, like Cheng and Kwan (2000), that yielded the same puzzling results between labour quality and FDI inflows as applied to the Chinese context.

#### *Stock Market Development (STOCK)*

The variable STOCK is shown to have a negative coefficient, which runs contrary to this research's hypothesis. It is also found to be statistically insignificant in accounting for the net FDI flows received by the Philippines from 1996 to 2014. The result is, however, consistent with Kucera (2006), which could be the reason why foreign investors engage in FDI rather than pursue investments through the stock market. It might also imply that the stock market in the Philippines requires development, as its negative relationship with FDI might be taken to mean that the enforcement of law and commitment to shareholder protection, all of which are determinants of stock market development (Claessens et al. 2001; World Bank 2014), are simply inadequate.

#### *Real Interest Rate (RIR)*

The final variable, RIR, is found to be positively correlated to net FDI inflows and is also statistically significant at the 5 percent level. This positive and significant relationship is congruent with the research's expectations. Moreover, the value of the coefficient implies that a percent change in the real interest rate could lead to a 1.233 percent increase in the net FDI flows. The implications of the coefficient of RIR suggest that foreign investors are motivated to engage in FDI in the Philippines to take advantage of the higher prevailing interest rate relative to their home countries. Since FDI is primarily financed in the home country, foreign investors gain cost advantages in the Philippines and get higher returns for their invested capital.

### **Conclusions and recommendations**

Consistent with a host of prior econometric works, this research has found out that the market size of the Philippine economy, as measured by its gross domestic product, is a highly significant and positive determinant of FDI. Similarly, the transportation infrastructure in the country, indicated by the total length of national roads, is strongly and positively correlated to FDI inflows. The telecommunications infrastructure, as measured by the number of internet users and mobile subscriptions per 100 people in the country, however, is negatively correlated to FDI. Meanwhile, wage costs are positively correlated to FDI inflows. Perhaps the most surprising results are those related to the indicators of labour

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quality which either have a significant but negative correlation or a positive but non-significant correlation with FDI. Stock market development, as indicated by the size of the stock market expressed as a percentage of the country's GDP, is negatively correlated and statistically non-significant to FDI. Finally, real interest rate is significantly and positively correlated to FDI inflows.

Based on the results of the study, the area that requires the most attention in terms of improvement is infrastructure. The Philippines is an archipelagic country composed of more than 7100 islands, which makes the physical transport of people, services and goods inherently difficult. The country suffers from an inferior infrastructure system that has long proved detrimental to the country's efforts to attract more significant inflows of the global FDI traffic. Negligible progress has been made despite earlier policy papers (notably, Aldaba 2006, Balboa–Medalla 2006, and Pernia et al. 2005) that highlighted the inadequacy of the country's infrastructure, citing in particular the poor state of road networks. Concerns were raised over the fact that the Philippines had one of the lowest infrastructure investment rates in Southeast Asia, amounting to only 2-3% of its GDP, as opposed to Thailand's 5-6% in the mid-2000s. The said reports also noted that the costs of electricity, Internet and telecommunications services in the Philippines were the highest in the ASEAN region.

The Philippines can look to the experience of the European Union for guidance as it deals with competition and integration issues within ASEAN. As the earlier cited research studies found out, the 28-member bloc's great appeal to foreign investors was largely due to the size and homogeneity of its market as well as to its stable growth. Likewise, high infrastructure investments and efficient labour force brought about by financial and workforce mobility were significant factors in drawing FDI. Other locational considerations were political and legal continuity as well as the stable interest rate environment in the region as a whole. These are important insights for the Philippines to ponder upon as it contemplates its future in the ASEAN trading bloc moving forward.

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