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The Impact of Foreign Direct Investment on Economic Growth and Domestic Investment in Cambodia

Seakchhy Monyrath

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List of Abbreviations

DI	:	Domestic Investment
EXP	:	Export
FDI	:	Foreign Direct Investment
FE	:	Fixed Effect
GDP	:	Gross Domestic Product
GMM	:	Generalized Method of Moments
H	:	Human Capital
INIGDP	:	Initial GDP
LIFE	:	Life Expectancy
MEF	:	Ministry of Economics and Finance
RE	:	Random Effect
UNCTAD	:	United Nations Conference on Trade and Development

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Abstract

This paper examines the impact of foreign direct investment (FDI) on economic growth and the linkages between FDI and domestic investment (DI) in Cambodia. This study uses secondary data from 36 countries and covers the time period 2004-2012 in order to determine the impact of FDI inflows on economic growth by using macroeconomic and dynamic panel data analyses of the impact of FDI on domestic investment. The study finds that there are positive relationships between FDI and growth. The estimation in this paper shows that human capital has a insignificant but positive relationship with FDI through a spillover effect. The estimation techniques are fixed and random effects. The Hausman test indicates that the fixed effects are more applicable. The Generalized Method of Moments (GMM) technique for panel data shows that FDI had a positive but insignificant impact on domestic investment. The author neither rejects the hypothesis that FDI crowds out domestic investment nor accepts that FDI has a direct impact on domestic investment. Therefore, this study suggests a negative competition effect that dominates a positive technology effect.

1. Introduction

Foreign Direct Investment (FDI) has emerged as the most important source of external resource flows to developing countries over the 1990s and has become a significant part of capital formation. Foreign direct investment is the category of investment that has a long-term relationship or enterprise in another country by the providing of direct investment or establishing of an enterprise. This study aims to understand the impact of FDI on economic growth by using panel data from 2004 to 2012. FDI is not the only topic discussed here, but the author also wanted to examine the nature of the impact of FDI inflows on domestic investment. The relationship between FDI inflows and domestic investment is important for future economic growth. Some studies have found negative impacts on domestic investment as well as the crowding out of domestic investment (Dhar & Roy, 1996; Sahoo, 2006), but other studies have found positive relationships between FDI and domestic investment (Bosworth, Collins, & Reinhart, 1999).

1.1. Overview of Cambodia's Economy

Cambodia opened its economy to foreign investors in 1990. This openness has led to Cambodia's GDP increasing by 10% p.a. between 2004 and 2007. According to MEF's forecast, the GDP decreased by 0.1% in 2009 due to the world economic crisis in the second half of the year 2008, but increased in 2010 and 2011 by 6% and in 2012 by 6.5%.

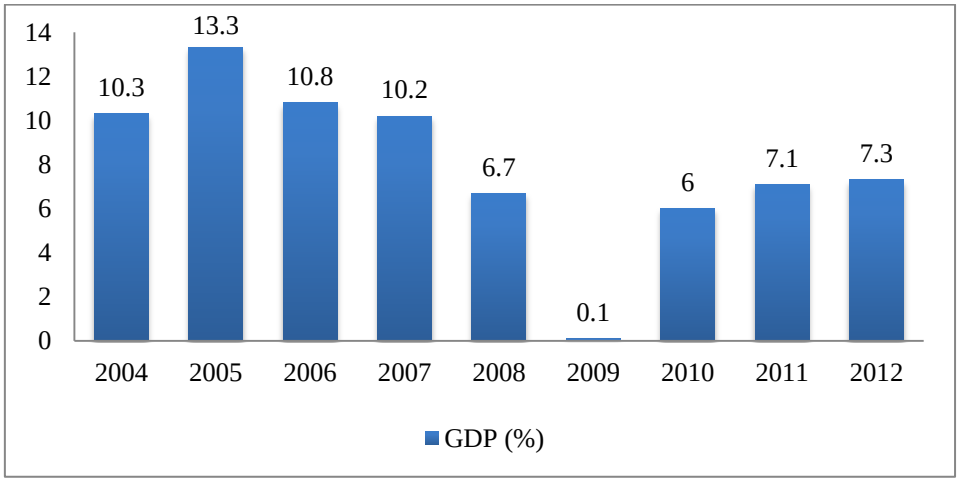

Figure 1: Trend of GDP Annual Growth

Source: World Bank

Economic activities from many sectors, such as agriculture and fishery, industry, services, and taxes on products, also contributed to the growth in GDP. The most important contributor was the garment and footwear industry, which suffered seriously from the world economic crisis of 2008, decreasing by 4% in 2008 and 9.5% in 2009, but recovered to increase by 13.6% in 2010. According to MEF, growth increased by 8% to 9% during the following few years.

A large number of FDI inflows have led to the fast economic growth of Cambodia. In 2012, there was about $1.4 billion in FDI, which continued to grow in the second half of 2013 during the elections (World Bank, 2013). The GDP growth rate increased by only 7% while FDI was increasing. This phenomenon shows that Cambodia has benefited less from FDI due to some internal factor of the country (Lim & Moolio, 2013). Cambodia is a developing country with low technology advancements, and will not be able to absorb much technology from FDI inflows due to low human capital.

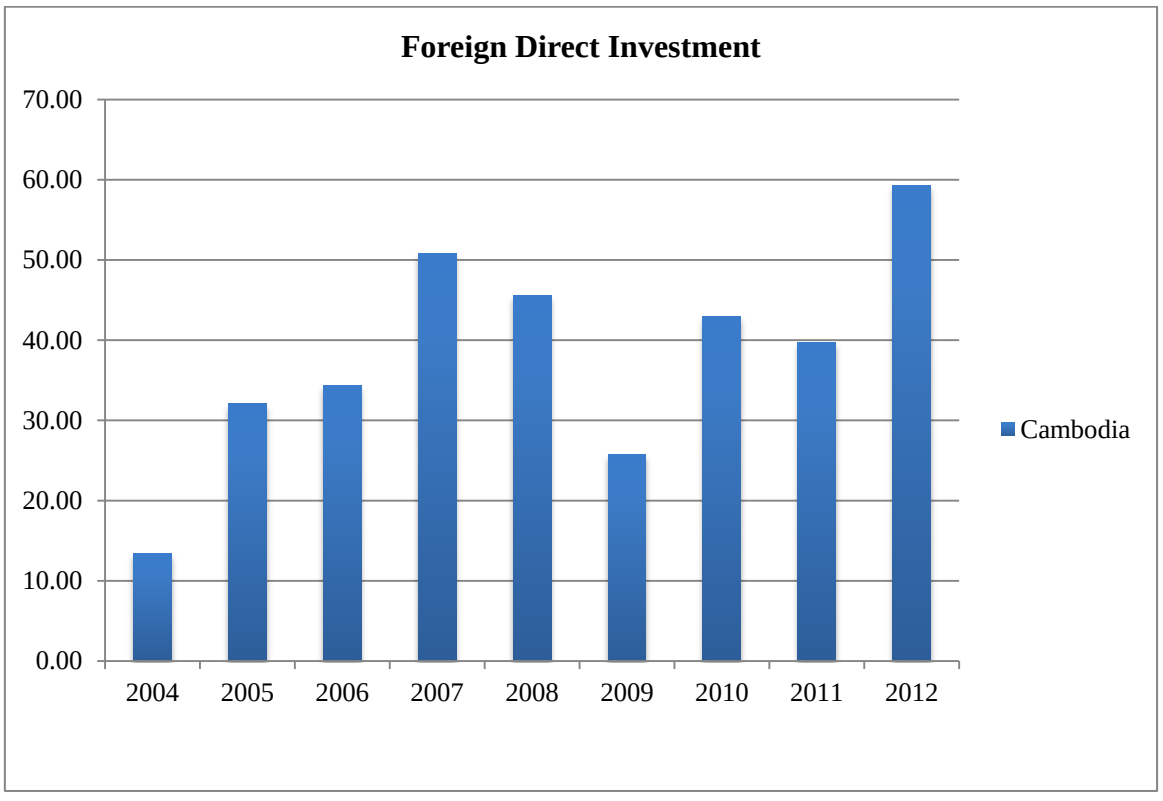

Figure 2: Foreign Direct Investment as a Percentage of Gross Fixed Capital Formation

Source: UNCTAD

1.2. Research Rationale

FDI is the key to economic growth by generating employment and promoting international trade. FDI directly provides many benefits, such as technology transfer and knowledge sharing, to a host country. Through spillover effects, DI in the host country itself may benefit from FDI. While the spillover effects of FDI can be beneficial, FDI with high financial power, better technology and productivity may displace or discourage DI. In Cambodia, FDI will lead to a negative market-driven system due to the outflow of benefits and the inflow of foreign capital. This study examines whether FDI is favorable to and what are the impacts of FDI inflow on Cambodia's economic growth.

1.3. Research Objectives

This study aims to understand the impact of FDI on the economy of Cambodia by using the panel data from 2004 to 2014. The first objective of this study is **to understand the impact of FDI on economic growth** in order to learn which factors are influenced by FDI, and how they affect Cambodia's economic growth, as well as to find out how FDI benefits the growth of particular economic activities. The second objective is **to examine the impact of FDI inflows on domestic investments.** A review of the literature has found that there are both negative and positive relationships between FDI and DI in Southeast Asian countries, but in the case of Cambodia, no clear study has been done yet.

1.4. Research Questions

1. What are the impacts of FDI on Cambodia's economic growth?
2. What are the impacts of FDI inflows on domestic investment?

1.5. Scope and Delimitations

The study analyzes the data of 36 countries from the years 2004 to 2012, and focuses on Cambodia as the study. Due to the limitations of the data, the r-square of the results may not be appropriate, but the results reveal the influences of FDI on GDP growth and on domestic investment. Providing recommendations is also not appropriate, because of the lack of data, which may produce some errors. There are recommendations for future studies if sufficient data becomes available in the near future. The results show that FDI in low-income or lower-

middle-income countries does not contribute to domestic investment directly, but rather, does so in an indirect way. Any direct contributions tend to be rather limited.

2. Literature Review

2.1. What is Foreign Direct Investment?

FDI is defined as a cross-border investment by a country in order to establish a stable and long-lasting investment in another country. FDI is the key element in international economic integration, and establishes a direct, stable and long-lasting link between the home and host countries, thereby encouraging the transfer of technology and know-how between the countries. The host country can promote its products in international markets. FDI is an important driving factor for development, and under the right policy environment, it is an additional source of funding for investments (Factbook, 2013).

2.2. Determinants of Foreign Direct Investment

There are many previous studies of the determinants of foreign direct investment. Cuyvers, Plasmans, Soeng and Van den Bulcke (2008) used panel data set analysis of data from 17 countries for the years 1995 to 2005 within both approved and realized FDI, and used three estimation procedures, pooled OLS, fixed effects (FE) and random effects (RE), to investigate the factors affecting foreign direct investment in Cambodia. It was found that the home country's GDP growth rate, bilateral trade with the host country, and the exchange rate had a positive impact on inward FDI flows into Cambodia. There were significant negative impacts on Cambodia's ability to attract FDI due to the Asian crisis of 1997-1998 and to China's economic expansion. International trade was shown to have a significant impact on FDI flows into the country. Therefore, inward FDI will increase when Cambodia further liberalizes international trade, a move that is expected to generate a positive impact on economic growth. Cuyvers et al. (2008) noted that some determinants, such as interest rates, inflation, GDP, labor productivity and political risk, were not significant at all. Onyeiwu (2003) used the panel data of 51 developing countries, 10 of which were from the MENA region (the Middle-East and North Africa) for the period 1975 to 1999 by using both fixed and random effect regression. In his study, he used variables such as FDI inflow, the rate of return on investment, trade openness, political rights, infrastructure, natural resource availability, corruption and bureaucratic red tape, human capital, inflation, real GDP growth

rate, tax rate and external debt. Of these, the rate of return on investment, infrastructure, economic growth and inflation were found to be unimportant for FDI flows to MENA countries. While trade openness increases FDI flows, corruption/bureaucratic red tape reduce flows to the region. Therefore, privatization and trade liberalization are important preconditions for FDI flows into the MENA region.

2.3. Foreign Direct Investment in the Economy

FDI is the main driving factor for economic growth and a significant influence on GDP (Nistor, 2014). Ngov (2008), studied the impact of governance in attracting FDI as well as in promoting DI and growth performance in Cambodia. He grouped the growth performance of countries into three different categories: low-income, middle-income and high-income groups. He found that in the low-income group, no governance variable had statistically significant correlations with GDP per capita growth rate and with FDI inflow ratio. Middle-income countries had a positive correlation with GDP growth per capita in most governance elements. The high-income group had a positive relationship with growth performance in governance factors, but had no investment or FDI ratios. However, he cannot see a clear direct impact on either domestic or foreign investment (Ngov, 2008). Kotrajaras (2010) studied the impact of FDI on economic growth in East Asian Countries. He also categorizes those countries into three groups: high-income, middle-income and low-income. The results of his study showed that there was a positive relationship between FDI and economic growth only in the high and middle-income groups due to the high level of human capital, trade openness and good infrastructure. The results did not show a positive relationship between FDI and economic growth for the low-income group due to inappropriate facilities for investment, as well as low degrees of trade openness and investment in education (Kotrajaras, 2010). He also mentioned that a high level of trade openness tends to absorb more technology spillover from FDI. Human capital plays a very important role in productivity. FDI has a positive effect on economic growth, but this effect depends on how much of the human capital in the host country is available (Borensztein, De Gregorio, & Lee, 1998).

The positive impact of FDI and trade on economic growth depends on the level of human capital, domestic investment, infrastructure, macroeconomic stability and the government's trade policies (Makki & Somwaru, 2004). Their results show that these functions were very important sources of achieving economic growth for developing countries (ibid, 2004). The

growth resulting from the effects of FDI is stronger in those countries that promote exports rather than import substitution (Balasubramanyam, Salisu, & Sapsford, 1996). FDI is also a very important contributor of technology transfer for the host country and contributes more to economic growth than does DI (Borensztein et al., 1998). The empirical evidence in their studies reveals that the technology transfer and spillover effects of FDI stimulate economic growth (ibid, 1998). Meanwhile, the host country can benefit from FDI, because FDI is associated with both import and export trade in goods, and will lead to investment-led export growth (Koojaroenprasit, 2012). Cambodia, as the host country, is enjoying the benefits by providing attractive policies for foreign investors and increasing its export growth. According to a 2015 GMAC report, Cambodia's export-led growth has mainly been in the garment and footwear industry, which significantly contributes to approximately 80% of total exports in Cambodia. FDI plays a very important role in helping the host country transform the industrial structure and composition of the country's commodity exports (Koojaroenprasit, 2012). FDI contributes to growth through different channels and is a source of capital formation, which refers to the net additions to the capital stock of an economy. These additions include the building of factories, as well as improved transportation and machinery that are the result of increasing total investments that directly contribute to growth. FDI also contributes to growth indirectly by influencing other macroeconomic variables, such as employment, exports and savings, that enhance growth (Fan & Dickie, 2000).

In an open economy, multinational companies (MNCs) have some disadvantages when operating in a country, such as geographic and cultural distances, when compared to the local firms of that country. To overcome these disadvantages, MNCs need to develop some kind of ownership advantages, such as technology, cost-effectiveness, financial strength and established markets, so that the MNCs can operate in a foreign market. By bringing these advantages, FDI contributes to improving the technology, equipment and infrastructure in the host country, as well as improving intangible assets, such as human resources, management skills, market channels and capital (Koojaroenprasit, 2012). The transitional economies will depend much on FDI, because of insufficient reserves that would need technology and capital inflow to stimulate economic growth (Bevan & Estrin, 2000; Billington, 1999). The capital inflows are a consequence of the transition to a market economy.

Today, globalization has an immensely significant impact on the way that business is done. The astounding growth in global FDI is one of the key results of globalization and has

enabled the substantial growth in international trade. There are no longer any trade boundaries in the global market. FDI is an important factor in the globalization process as FDI is cross-cutting among states, regions and firms. International trade, direct investment and international flows are growing and are all part of globalization, forming what is called the "Global Village" (Agrawal & Khan, 2011).

2.4. Foreign Direct Investment in the Host Country

The host countries can obtain technological advancements can be obtained through that benefit domestic firms through the spillover effects (Koojaroenprasit, 2012). Several studies point out that FDI is often vertically integrated intra-firm rather than horizontally linked with other industries in the same sector, because foreign firms usually try to prevent the leakage of proprietary information to competitors, but will provide technology to domestic partners in order to obtain a cheaper source of input together with a higher quality of output (Liang, 2009). The productivity gains and lower the market prices was the evident that supplier in supplying sector had supply to a large number of foreign firms as the case of Indonesia (Blalock & Gertler, 2008).

When FDI flows into a host country, there is the potential for FDI to bring together new technologies and ideas, as well as the best working management and practices that can be transferred to domestic firms. During this process, the local firms may improve their technology as foreign firms provide technological assistance to their local suppliers or counterparts, and train the local workers. The competitive market pressure of foreign firms may force domestic firms to perform more efficiently and create technological innovations (Koojaroenprasit, 2012). The spillover of technology can probably be more beneficial if multinational and domestic companies form joint ventures that result in positive spillover effects. This will help domestic companies to absorb efficient technologies more easily with the shared knowledge of partner companies. FDI provides ready access to world markets and acts as a guide to globalization for the host country (Ram & Zhang, 2002).

Since FDI contributes technology and capital inflows that increase productivity in the host country, the author assumes that FDI contributes to the economic growth of the host country. There are many studies showing some relationships among FDI, DI and economic growth. These studies have used cross-sectional or panel data to investigate the relationships, and so,

are likely to suffer from problems of data comparability and discrepancy (Adams, 2009; Apergis, Katrakilidis, & Tabakis, 2006; Choe, 2003; Hecht, Razin, & Shinar, 2004; Wang, 2009). Adams (2009), conducted a study using panel data analysis in 42 sub-Saharan African countries, and found that the low level of development in these countries did not allow for FDI to have a positive impact on economic growth, but DI did have a positive and significant correlation with economic growth. Hecht et al. (2004), found that the impact of FDI inflows on DI was weak, while much of DI had a significant impact on FDI among the 64 estimated countries in his study. On the contrary, Choe (2003) found that the adventitious relationship between FDI and DI remains contentious.

Since FDI has backward and forward linkages that have correlations with local industries, FDI can either complement or displace DI (Sahoo, 2006). Thus, there is a negative relationship between FDI and DI (Dhar & Roy, 1996). Bosworth et al. (1999) also found that FDI had a positive and corresponding impact on DI. According to a literature review by Lipsey (2002), there was a positive correlation of FDI with technology spillover in the host country. Inward FDI contributes to productivity growth that helps to increase trade (Sahoo, 2006). Sahoo also mentioned that FDI firms could promote more trade as their trading tendency in any sector is greater than domestic firms of the host country. Kokko et al. (2001) found that the foreign-oriented firms had less impact, but the local firms had a larger impact on locally-oriented FDI.

2.5. Linkages between Foreign Direct Investment and Domestic Investment

Noorbakhsh, Paloni, and Youssef (2001) said that human capital is an important determinant of FDI inflows, and is one of the most important drivers of foreign investment. Studying the relationship between FDI and DI, Desai, Foley and Hines Jr. (2005) found that the empirical results ran both ways between FDI and DI, especially in the case of private investment. There was no statistical evidence of a positive correlation between FDI/GDP and the youth literacy rate in the case of a sample of African countries used in their study. A finding by Feldstein (1995) using data from the 1970s and 1980s indicated that in the United States, outbound FDI reduced total DI, while inbound FDI contributed to total DI. FDI had crowded out private investment; however, the results also clearly indicated that private investment had a stronger impact on FDI. The results from Desai et al. (2005) suggested that FDI in resource-intensive countries was driven by factors different from those in non-resource-intensive countries. FDI,

in the form of privatization, essentially influences the host country's technological progress. This is so in the case of a revamped company. FDI enterprises become strong competitors in the market of a host country and attract local business. This is the positive relationship between FDI and domestic investment (Nistor, 2014). There are some linkage effects with producers of intermediate goods who are creating complementarities that could benefit the domestic producers of final goods (Markusen & Venables, 1999). The technology spillovers consequently improve productivity in the host countries, as well as the productivity of the firms receiving investment (Rappaport, 2000).

3. Research Methodology

3.1. Data Collection

The FDI inflows were collected from UNCTAD. The data for real GDP growth rate, GDP, life expectancy and initial GDP (log GDP per capita) were obtained from the World Bank. DI was calculated by the author. Since the total investment is one hundred percent, so the DI was calculated as a percentage of GFCF by subtracting FDI inflows from one hundred. For the human capital, there are various indicators of human capital stock. As human capital is used differently in different fields of research, there is no clear consensus on what should be the proxy for human capital due to the lack of data and theoretical debates. In this research, the enrollment in the secondary enrollment ratio was entered in the model as a proxy for human capital. These statistics were gathered from the Ministry of Education Youth and Sports (MOEYS) for Cambodia, Quandl (data from the United Nation database) and UNESCO.

3.2. Methods and Techniques of Data Analysis

The aim of this research is to examine the impacts of FDI inflows on DI and economic growth in Cambodia over the years 2004-2012. The impact of FDI on economic growth is analyzed by using the following econometric equation:

$$GDP = a + b_1FDI_{it} + b_2H_{it} + b_3LIFE_{it} + b_4INGDP_{it} + b_5EXP_{it} + e \quad (1)$$

Where GDP = real GDP growth rate

FDI = Foreign Direct Investment inflows as percentage of Gross Fixed Capital Formation

H = Human Capital (secondary enrollment ratio)

LIFE= Life Expectancy

INGDP= Initial GDP (log GDP per capita)

EXP= Export

This study uses dynamic panel data analysis, developed by Arellano and Bond (1991), for the impact of FDI on domestic investment. To find out the impact of FDI on DI, the author adopted the GMM model from Sahoo (2006). The following equation examines the impact of FDI on DI:

$$DI_{it} = a_0 + a_1 DI_{it-1} + a_2 DI_{it-2} + a_3 FDI_{it-1} + a_4 FDI_{it-2} + a_5 GDP_{it} + u_t \quad (2)$$

Where DI= Domestic Investment as percentage of GFCF

FDI= foreign direct investment inflows as percentage of GFCF

GDP = real GDP growth rate

4. Results and Discussion

4.1. The Impact of Foreign Direct Investment on Gross Domestic Product

Table 1 displays the results of panel data analysis from 2004 to 2012 for the 36 countries. The results of the panel data analysis show that the coefficient of the FDI inflows as a percentage of gross fixed capital formation is significant. This implies that a 1% increase in FDI inflow leads to a 0.06% increase in GDP growth due to the estimation of fixed effects. Nistor (2014) found that there was a significant influence of FDI on GDP in Romania, and FDI was considered as the active factor in economic growth. Nistor also found that FDI had a positive impact on the gross domestic product and he supports the notion that FDI inflows can be considered as active development and adaptation for market economies and competitiveness.

Table 1: The impact of FDI inflow on GDP

			Hausman Test				
	Fixed Effects	Random Effects	Fixed	Random	Difference	S.E.	Pesaran CD-Test
_cons	0.02	0.04					
	(2.29)	(2.08)					
FDI	0.06*	0.01***	0.02	0.03	-0.00	0.01	
	(1.86)	(2.63)					
LIFE	-0.09	0.45	-0.50	0.31	-0.53	0.29	
	(-1.70)	(0.75)					
H	0.43	-0.71	0.03	-0.00	0.04	0.04	
	(0.79)	(-0.37)					
INIGDP	-0.90	-0.40	-0.25	-0.29	0.04	2.02	
	(-0.12)	(-0.84)					
EXP	0.00***	0.00***	0.68	0.10	-0.03	0.00	
	(4.57)	(6.93)					
R2	0.12	0.10					
No. of Obs.	324	324					
No. of Grou.	36	36					
Pr							0.00
Prob> F	0.00						
Prob> chi2		0.00					

Note: numbers in parentheses () are the values of the t-statistic (Fixed) and the z-statistic (Random).
*: significant at 10%; **: significant at 5%; ***: significant at 1%

The results of the Hausman test given in Table 2 show that estimation endorses the Fixed Effect Model. The coefficient for life expectancy is negative and insignificant, meaning that there is no relationship or impact on the dependent variable. The initial GDP is minus due to the conditional convergence that represents the good sign. The coefficient for human capital is also negative and insignificant, meaning that the interaction between FDI and human

capital has no correlation, and indicating that in low-income or lower-middle-income countries, which have low human capital, human capital cannot contribute much to FDI. The result may change when the high level of human capital in the recipient country absorbs more technology spillovers from FDI. Looking at the results, it can be concluded that the increase in FDI inflows has a significant impact on economic growth, because FDI brings in more capital and increases exports.

4.2. The Impact of Foreign Direct Investment on Domestic Investment

The results of the investment function were obtained by using the GMM estimation developed by Arellano and Bond (1991). The estimation was done for the period 2004 to 2012 for 36 countries (low-income and lower-middle-income).

Table 2: Impact of FDI on DI

	OLS Pooled Regression	**GMM Panel Estimation**
		Period (2004-2012)
No. of obs.		214
Group	36	36
DI_{t-1}	0.00***	0.00***
	(8.6)	(4.11)
DI_{t-2}	0.00***	0.00***
	(4.09)	(3.19)
FDI	0.54	0.57
	(-0.62)	(-0.56)
FDI_{t-1}	0.5	0.46
	(0.68)	(0.73)
FDI_{t-2}	0.87	0.31
	(0.16)	(1.01)
GDPGR	0.13	0.01
	(-1.53)	(-2.60)
Constant	0.00	0.04
	(4.78)	(2.08)

	OLS Pooled Regression	GMM Panel Estimation
Sargan Test		101.92
R^2	0.48	
F (6, 245)	38.21	

Dependent Variable: Domestic Investment as percentage of GFCF
Note: *: significant at 10%; **: significant at 5%; ***: significant at 1%

The coefficient of FDI inflows is positive but insignificant with lag for the first and second years. The coefficient of FDI lagged for one year is 0.46 and for two years is 0.31. These results show that FDI did not contribute to domestic investment, and implies that in low-income or lower-middle-income countries, there are lower levels of linkages and human capital to absorb knowledge and technology from FDI. The results of the GMM estimation show that DI does not have any linkages, because of the lower supply of DI to FDI resulting from the low level of technology and quality resources. However, DI significantly contributes to GDP growth. Thus, FDI in the current period does not affect the domestic investment ratio, because there are few linkages between FDI and domestic investment.

5. Conclusion and Recommendations

This paper examines the factors of FDI inflows that affected Cambodia over the period 2004-2012. The data from 36 countries, including Cambodia, was employed for both panel and dynamic panel data (Generalized Method of Moments).

FDI may greatly contribute to GDP in terms of capital inflows and increases in exports, but the model most likely misspecified between control variables and growth. This error is much more important for further study when there are more data for the time series than for the panel analysis. According to the Hausman test, the fixed effects estimation was significant and more applicable. Undoubtedly, the confidence in the result would be greater if the estimated coefficients were favor in random effects.

The study finds that FDI has a significant impact on growth and exports. Therefore, Cambodia needs to improve its human capital in order to absorb the technology spillover from FDI, so that the country can help the linkages between FDI and DI. Through dynamic effects, FDI does not affect domestic investment in the current period, but it has a positive

impact on the past period. In summary, without human capital from the host country, domestic companies will not be able to absorb much from FDI, thereby leading to slow growth. The empirical results show that FDI has a positive but insignificant relationship to growth and DI at the lagged first and second years, meaning that FDI does not contribute to domestic investment directly. However, FDI may contribute indirectly due to the positive correlation.

The GMM estimation suggests that domestic firms should establish direct linkages with FDI. The positive spillover effects may lead to a positive relation between FDI and DI in the long run. At a later stage, domestic firms can establish market competition and sustainable restructuring, which may result in dynamic positive effects of FDI inflows on economic growth.

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Appendix

Table 3: Correlations among Variables

	Variable	GDP	FDI	DI	LIFE	H	INIGDP	EXP
GDP growth	GDP	1						
FDI inflows	FDI	0.14	1					
Domestic	DI	-0.14	-1.00	1				
Investment								
Life Expectancy	LIFE	0.04	0.00	0.00	1			
Human Capital	H	-0.01	0.03	-0.03	0.60	1		
Initial GDP	INIGDP	-0.03	0.19	-0.19	0.58	0.27	1	
Export	EXP	0.41	-0.00	0.00	0.06	-0.04	-0.08	1

Source: Author

Table 4: Secondary Enrollment Ratio

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	46.38	45.02	45.59	46.37	44.46	48.17	49.89	50.79	53.65
Bhutan	42.00	45.71	48.67	52.89	56.49	61.81	66.25	69.69	73.94
Bolivia	84.46	82.33	80.20	79.47	78.90	77.75	77.54	77.27	78.17
Brazil	48.84	51.23	53.45	55.51	56.48	58.64	64.59	65.14	65.28
Cambodia	31.14	34.97	39.39	42.37	45.01	45.14	46.18	46.55	46.92
Cameroon	26.17	26.63	23.16	31.74	35.91	39.59	43.47	47.19	50.38
China	62.47	64.75	67.04	71.26	75.38	79.18	83.13	86.61	88.98
Colombia	78.18	82.21	85.76	88.71	90.15	94.25	95.96	97.06	92.81
Costa Rica	77.91	80.40	87.54	89.08	90.42	96.89	99.36	101.11	103.61
Ecuador	59.80	62.58	65.11	67.03	74.79	79.99	85.19	85.12	86.84
El Salvador	62.56	61.87	61.58	61.68	61.48	62.82	64.68	67.20	69.24
Georgia	79.06	81.78	83.49	89.33	89.58	86.76	90.22	93.68	97.15
India	52.49	55.14	56.10	58.66	61.93	61.30	65.07	68.51	71.47
Indonesia	63.35	61.74	64.38	72.36	71.41	76.54	78.43	81.16	82.54
Jordan	91.67	91.75	92.68	92.82	93.89	91.90	89.91	89.06	87.83
Kenya	47.17	47.86	50.02	52.53	59.18	60.12	62.41	64.70	66.99
Lao PDR	42.89	43.12	42.11	42.22	42.64	43.60	44.84	43.60	46.54
Lesotho	37.95	39.59	39.84	41.84	43.80	46.87	50.40	52.04	53.29
Macedonia	80.23	80.14	80.03	80.20	80.14	80.30	81.91	82.37	82.83
Malaysia	72.03	68.72	67.97	66.17	66.05	65.51	66.88	67.24	70.80
Mauritania	21.90	22.27	23.15	20.98	18.81	20.11	20.33	22.42	26.70
Mauritius	87.05	90.74	90.10	91.41	91.41	92.48	93.19	94.38	95.85
Morocco	47.78	49.59	52.37	55.38	57.47	60.21	62.46	65.56	68.88
Nepal	48.50	50.50	47.66	47.36	53.84	54.39	60.44	62.73	65.82
Nigeria	34.75	34.70	34.19	31.61	35.09	38.90	43.83	48.76	53.69
Pakistan	24.10	25.28	30.75	33.06	33.46	33.52	34.07	34.94	36.60
Panama	67.35	67.43	67.11	67.24	67.97	69.08	70.30	69.74	84.05
Peru	84.39	84.79	87.10	89.24	89.40	91.18	91.73	91.77	89.78
Philippines	83.41	83.03	81.45	81.53	82.43	84.60	84.79	84.98	85.18
Senegal	20.58	22.62	24.32	27.37	30.42	33.42	36.41	41.00	45.60
Swaziland	44.76	46.62	50.34	53.98	53.99	53.99	57.97	59.92	60.69
Tajikistan	80.33	80.41	81.40	82.43	83.19	83.67	84.40	85.55	87.00
Thailand	66.71	71.37	71.58	77.26	78.04	80.67	83.48	87.37	86.98
Ukraine	96.01	92.00	93.94	94.66	94.77	94.59	95.39	93.91	97.77
Uzbekistan	98.53	101.46	101.52	103.28	102.08	103.82	104.53	105.17	106.52
Vietnam	74.67	77.09	77.49	77.73	77.21	76.20	77.22	78.24	79.26

Source: MOEYS, World Bank, Quandl, Author estimation

Table 5: Life Expectancy

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	67.09	67.49	67.89	68.28	68.68	69.08	69.49	69.89	70.29
Bhutan	63.30	64.03	64.72	65.37	65.96	66.51	67.00	67.46	67.89
Bolivia	64.36	64.70	65.03	65.36	65.69	66.01	66.32	66.63	66.93
Brazil	71.44	71.72	71.99	72.26	72.53	72.80	73.08	73.35	73.62
Cambodia	66.02	67.04	67.98	68.82	69.54	70.15	70.64	71.05	71.41
Cameroon	51.72	51.89	52.15	52.48	52.86	53.26	53.69	54.14	54.59
China	73.79	74.05	74.26	74.42	74.58	74.73	74.89	75.04	75.20
Colombia	72.02	72.26	72.50	72.72	72.94	73.16	73.37	73.57	73.78
Costa Rica	78.31	78.45	78.58	78.73	78.90	79.08	79.28	79.49	79.71
Ecuador	74.45	74.63	74.80	74.98	75.18	75.40	75.65	75.92	76.19
El Salvador	70.35	70.55	70.75	70.96	71.18	71.40	71.63	71.87	72.10
Georgia	72.71	72.91	73.09	73.25	73.40	73.54	73.67	73.81	73.94
India	63.72	64.10	64.46	64.79	65.11	65.41	65.69	65.96	66.21
Indonesia	68.55	68.85	69.15	69.42	69.69	69.93	70.17	70.39	70.61
Jordan	72.47	72.64	72.80	72.96	73.12	73.28	73.44	73.59	73.75
Kenya	53.93	54.70	55.60	56.59	57.61	58.62	59.55	60.37	61.08
Lao PDR	63.98	64.50	65.00	65.49	65.97	66.44	66.90	67.35	67.81
Lesotho	43.53	43.66	44.15	44.88	45.74	46.63	47.48	48.22	48.84
Macedonia	73.96	74.09	74.21	74.32	74.45	74.58	74.72	74.87	75.03
Malaysia	73.53	73.69	73.84	74.00	74.16	74.33	74.50	74.67	74.84
Mauritania	60.11	60.24	60.39	60.54	60.70	60.86	61.02	61.19	61.35
Mauritius	72.28	72.43	72.43	72.57	72.57	72.88	72.97	73.27	73.86
Morocco	68.88	69.07	69.27	69.49	69.71	69.94	70.17	70.41	70.64
Nepal	64.24	64.75	65.24	65.72	66.19	66.65	67.10	67.55	67.98
Nigeria	48.13	48.66	49.23	49.79	50.33	50.83	51.29	51.71	52.11
Pakistan	64.94	65.17	65.39	65.60	65.78	65.96	66.13	66.28	66.44
Panama	75.84	76.01	76.18	76.36	76.55	76.75	76.95	77.16	77.37
Peru	72.10	72.42	72.72	73.01	73.31	73.60	73.91	74.21	74.52
Philippines	67.35	67.49	67.63	67.77	67.92	68.07	68.23	68.39	68.55
Senegal	59.90	60.55	61.17	61.72	62.19	62.56	62.84	63.04	63.20
Swaziland	45.75	45.86	46.24	46.77	47.35	47.89	48.35	48.66	48.85
Tajikistan	65.30	65.68	66.03	66.34	66.60	66.82	67.00	67.14	67.26
Thailand	71.98	72.33	72.68	73.02	73.32	73.59	73.81	74.01	74.19
Ukraine	68.19	67.96	68.08	68.22	68.25	69.19	70.27	70.81	70.94
Uzbekistan	67.27	67.35	67.44	67.53	67.63	67.74	67.86	67.98	68.10
Vietnam	74.47	74.63	74.77	74.90	75.04	75.17	75.31	75.46	75.61

Source: World Bank

Table 6: Initial GDP (log GDP per capita)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	6.16	6.24	6.33	6.38	6.36	6.41	6.46	6.51	6.56
Bhutan	6.18	6.24	6.29	6.34	6.38	6.42	6.48	6.53	6.57
Bolivia	7.14	7.18	7.33	7.35	7.40	7.49	7.55	7.59	7.59
Brazil	6.93	6.96	6.99	7.03	7.05	7.07	7.10	7.14	7.19
Cambodia	8.47	8.50	8.55	8.59	8.58	8.64	8.67	8.68	8.70
Cameroon	6.82	6.82	6.83	6.83	6.83	6.83	6.85	6.87	6.90
China	7.46	7.58	7.70	7.79	7.87	7.97	8.06	8.12	8.19
Colombia	8.13	8.18	8.23	8.25	8.25	8.28	8.33	8.36	8.39
Costa Rica	8.44	8.51	8.57	8.58	8.55	8.59	8.62	8.65	8.67
Ecuador	8.01	8.04	8.04	8.09	8.07	8.09	8.15	8.19	8.22
El Salvador	7.94	7.98	8.01	8.02	7.98	7.99	8.01	8.02	8.03
Georgia	7.29	7.37	7.49	7.52	7.47	7.52	7.59	7.64	7.68
India	6.61	6.68	6.76	6.79	6.85	6.94	6.99	7.03	7.08
Indonesia	7.15	7.19	7.24	7.28	7.31	7.36	7.41	7.45	7.49
Jordan	7.75	7.81	7.86	7.91	7.94	7.94	7.95	7.95	7.96
Kenya	6.26	6.30	6.34	6.31	6.32	6.37	6.40	6.42	6.45
Lao PDR	6.16	6.22	6.28	6.33	6.38	6.44	6.50	6.56	6.62
Lesotho	6.57	6.60	6.64	6.69	6.71	6.78	6.81	6.84	6.88
Macedonia	8.00	8.05	8.11	8.17	8.16	8.19	8.22	8.21	8.24
Malaysia	8.62	8.66	8.70	8.73	8.70	8.75	8.78	8.82	8.85
Mauritania	6.54	6.69	6.69	6.67	6.63	6.65	6.67	6.70	6.73
Mauritius	7.57	7.64	7.66	7.70	7.74	7.76	7.80	7.81	7.84
Morocco	5.77	5.79	5.81	5.86	5.89	5.93	5.95	5.99	6.01
Nepal	6.69	6.74	6.78	6.82	6.86	6.90	6.92	6.94	6.96
Nigeria	6.54	6.58	6.61	6.61	6.62	6.62	6.63	6.64	6.67
Pakistan	8.43	8.50	8.59	8.66	8.68	8.72	8.81	8.89	8.95
Panama	7.90	7.96	8.04	8.11	8.11	8.18	8.23	8.28	8.32
Peru	7.09	7.12	7.17	7.20	7.19	7.25	7.27	7.31	7.37
Philippines	6.65	6.65	6.67	6.68	6.67	6.69	6.68	6.68	6.69
Senegal	7.76	7.78	7.80	7.80	7.80	7.80	7.80	7.81	7.82
Swaziland	5.83	5.87	5.93	5.98	5.99	6.03	6.08	6.13	6.18
Tajikistan	7.90	7.94	7.99	8.01	7.99	8.06	8.06	8.12	8.14
Thailand	7.51	7.59	7.67	7.70	7.54	7.59	7.64	7.65	7.65
Ukraine	6.55	6.61	6.66	6.71	6.75	6.80	6.85	6.89	6.94
Uzbekistan	6.30	6.36	6.44	6.51	6.57	6.63	6.68	6.74	6.81
Vietnam	8.54	8.57	8.63	8.68	8.70	8.74	8.78	8.81	8.84

Source: World Bank

Table 7: FDI inflows as percentage of GFCF

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	2.78	4.85	4.32	3.22	4.57	2.62	3.04	3.36	3.54
Bhutan	2.00	1.42	17.11	0.62	3.68	12.08	3.24	2.12	1.83
Bolivia	8.33	-23.20	17.15	17.30	17.82	14.80	19.74	18.90	21.49
Brazil	16.98	10.72	10.52	14.51	14.26	8.86	11.63	13.96	15.96
Cambodia	13.42	32.07	34.34	50.78	45.61	25.75	42.99	39.75	59.28
Cameroon	2.99	8.30	1.97	5.33	0.51	17.79	12.00	11.92	9.22
China	7.71	7.99	6.59	6.11	5.88	4.14	4.23	3.71	3.14
Colombia	13.68	35.57	18.95	19.42	18.82	13.45	10.75	16.91	17.61
Costa Rica	22.93	23.02	32.76	33.08	29.52	20.78	20.37	26.81	25.58
Ecuador	11.61	5.82	2.78	1.83	7.65	2.16	0.95	3.10	2.46
El Salvador	14.68	19.58	8.00	47.28	27.72	13.18	-8.07	6.57	14.25
Georgia	34.98	25.16	59.11	66.90	56.90	39.95	36.18	32.29	23.16
India	2.69	2.89	6.61	6.18	10.83	7.95	4.76	5.65	4.02
Indonesia	3.29	12.33	5.59	6.43	6.59	2.91	6.06	7.11	6.57
Jordan	33.12	51.47	92.48	55.76	46.18	40.27	26.60	23.61	17.97
Kenya	1.76	0.61	1.18	13.82	1.61	1.91	2.72	4.89	3.12
Lao PDR	2.26	2.97	16.95	23.71	13.20	9.57	14.24	11.75	10.08
Lesotho	17.04	24.33	18.93	29.74	42.68	38.37	8.53	7.94	6.66
Macedonia	33.82	9.68	37.37	43.29	28.38	10.85	11.87	21.87	4.20
Malaysia	15.64	12.70	16.97	19.82	15.11	3.27	16.23	18.93	12.87
Mauritania	49.57	63.04	18.58	15.07	40.53	-0.36	9.65	51.23	131.33
Mauritius	0.78	2.98	6.46	17.34	16.13	10.64	17.79	16.04	22.54
Morocco	5.98	10.09	13.26	11.93	8.47	6.95	5.65	8.43	9.07
Nepal	-0.03	0.15	-0.36	0.26	0.04	1.42	2.40	2.41	2.55
Nigeria	32.75	81.24	40.74	39.53	47.63	42.22	22.84	35.30	23.95
Pakistan	8.29	12.40	17.68	21.38	20.44	9.07	8.16	5.00	3.00
Panama	42.70	36.99	79.68	39.00	36.00	21.23	41.02	38.29	28.89
Peru	12.83	17.72	19.44	23.61	20.56	20.54	20.38	17.53	21.45
Philippines	3.70	8.11	11.01	9.82	3.91	6.45	2.61	4.78	6.63
Senegal	4.31	2.20	9.00	10.08	11.08	10.90	9.22	9.90	8.01
Swaziland	19.08	-11.80	32.04	9.99	31.69	20.19	36.00	24.54	24.35
Tajikistan	126.26	21.19	77.28	41.67	29.70	7.28	0.58	3.76	11.87
Thailand	13.63	15.38	15.96	16.97	10.97	7.46	11.18	3.90	9.79
Ukraine	11.70	41.19	21.11	25.15	22.95	22.32	26.26	23.70	23.53
Uzbekistan	6.20	6.05	5.65	15.09	10.03	9.53	15.71	11.73	4.25
Viet Nam	10.66	10.84	11.53	25.69	30.38	21.17	21.14	20.69	22.19

Source: UNCTAD

Table 8: GDP Growth Rate

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	5.24	6.54	6.67	7.06	6.01	5.05	5.57	6.46	6.52
Bhutan	5.90	7.12	6.85	17.93	4.77	6.66	11.73	7.89	5.07
Bolivia	4.17	4.42	4.80	4.56	6.15	3.36	4.13	5.17	5.18
Brazil	5.66	3.15	4.00	6.01	5.02	-0.24	7.57	3.92	1.76
Cambodia	10.34	13.25	10.77	10.21	6.69	0.09	5.96	7.07	7.31
Cameroon	3.70	2.30	3.22	3.26	2.88	1.93	3.27	4.14	4.59
China	10.08	11.35	12.69	14.19	9.62	9.23	10.63	9.48	7.75
Colombia	5.33	4.71	6.70	6.90	3.55	1.65	3.97	6.59	4.04
Costa Rica	4.26	5.89	8.78	7.94	2.73	-1.02	4.95	4.52	5.17
Ecuador	8.21	5.29	4.40	2.19	6.36	0.57	3.53	7.87	5.22
El Salvador	1.85	3.56	3.91	3.84	1.27	-3.13	1.36	2.22	1.88
Georgia	5.86	9.60	9.38	12.34	2.31	-3.78	6.25	7.20	6.18
India	7.92	9.28	9.26	9.80	3.89	8.48	10.26	6.64	5.08
Indonesia	5.03	5.69	5.50	6.35	6.01	4.63	6.22	6.17	6.03
Jordan	8.56	8.16	8.09	8.18	7.23	5.48	2.34	2.56	2.65
Kenya	5.10	5.91	6.33	6.99	0.23	3.31	8.40	6.11	4.55
Lao PDR	6.36	7.11	8.62	7.60	7.82	7.50	8.53	8.04	8.02
Lesotho	2.29	2.70	4.31	4.73	5.73	3.38	7.87	4.05	4.99
Macedonia	4.67	4.72	5.14	6.47	5.47	-0.36	3.36	2.34	-0.46
Malaysia	6.78	5.33	5.58	6.30	4.83	-1.51	7.43	5.19	5.64
Mauritania	5.75	8.97	18.87	2.82	1.08	-1.04	4.77	4.39	5.97
Mauritius	5.75	1.24	3.95	5.89	5.51	3.05	4.10	3.89	3.20
Morocco	4.80	2.98	7.76	2.71	5.59	4.76	3.64	4.99	2.67
Nepal	4.68	3.48	3.36	3.41	6.10	4.53	4.82	3.42	4.85
Nigeria	33.74	3.44	8.21	6.83	6.27	6.93	7.84	4.89	4.28
Pakistan	7.37	7.67	6.18	4.83	1.70	2.83	1.61	2.75	3.51
Panama	7.52	7.19	8.53	12.11	9.15	3.97	5.85	10.77	10.25
Peru	4.96	6.29	7.53	8.52	9.14	1.05	8.45	6.45	5.95
Philippines	6.70	4.78	5.24	6.62	4.15	1.15	7.63	3.66	6.80
Senegal	5.87	5.62	2.46	4.94	3.68	2.42	4.27	2.07	3.45
Swaziland	2.91	2.46	3.30	3.50	2.37	1.25	1.68	1.33	2.66
Tajikistan	10.30	6.70	7.00	7.80	7.90	3.80	6.50	7.40	7.50
Thailand	6.34	4.60	5.09	5.04	2.48	-2.33	7.81	0.08	6.49
Ukraine	12.10	2.70	7.30	7.90	2.30	-14.80	4.20	5.20	0.20
Uzbekistan	7.70	7.00	7.30	9.50	9.42	8.10	8.50	8.30	8.20
Vietnam	7.54	7.55	6.98	7.13	5.66	5.40	6.42	6.24	5.25

Source: World Bank

Table 9: Exports

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bangladesh	85.61	43.00	25.48	12.98	7.08	0.03	0.94	29.34	12.53
Bhutan	25.54	33.21	51.67	15.77	-9.31	-2.96	7.52	3.20	-2.40
Bolivia	16.62	8.34	11.34	3.09	2.17	-10.76	9.85	5.88	11.85
Brazil	14.47	9.64	4.84	6.18	0.41	-9.25	11.72	4.79	0.55
Cambodia	28.08	16.39	19.19	10.15	15.66	-9.87	20.56	18.88	-16.76
Cameroon	8.96	1.41	1.31	5.34	-3.69	-12.51	7.79	2.25	-1.28
China	18.40	25.13	35.08	22.23	9.49	-10.24	27.73	10.33	7.02
Colombia	9.81	5.71	8.60	6.91	4.48	-2.85	1.26	11.75	5.99
Costa Rica	8.15	12.79	10.28	9.91	-2.01	-6.02	5.54	5.52	9.26
Ecuador	17.18	8.63	7.13	0.02	2.98	-4.79	-0.24	5.67	4.70
El Salvador	3.59	0.90	5.88	7.08	6.86	-15.97	11.61	9.28	-7.45
Georgia	4.92	17.21	6.52	6.67	-6.16	-0.01	24.87	11.13	11.77
India	27.18	26.07	20.36	5.93	14.60	-4.69	19.62	15.58	6.66
Indonesia	13.53	16.60	9.41	8.54	9.53	-9.69	15.27	14.77	1.61
Jordan	14.56	2.65	12.47	2.30	-12.05	-3.67	25.39	-1.12	-2.53
Kenya	12.59	9.38	3.06	6.65	2.37	-5.22	8.74	9.28	-0.39
Lao PDR	9.46	19.74	28.46	-8.11	0.06	3.69	24.91	13.01	12.86
Lesotho	5.46	-8.34	12.72	4.31	10.50	-4.26	7.48	3.06	-1.20
Macedonia	17.19	17.93	12.13	13.79	-4.67	-13.89	23.68	16.14	1.95
Malaysia	16.06	8.30	6.68	3.77	1.57	-10.88	11.12	4.46	-1.83
Mauritania	25.97	0.00	63.54	-3.66	-1.71	2.19	3.24	16.90	-1.35
Mauritius	-0.35	10.65	9.28	1.80	4.00	-3.40	14.30	5.20	3.50
Morocco	6.27	13.29	11.62	5.19	7.26	-14.77	16.62	2.12	2.62
Nepal	12.28	-3.03	-1.29	-0.95	0.73	3.87	-10.44	-2.11	1.92
Nigeria	-0.95	12.37	60.22	-17.65	28.77	-30.70	53.52	25.79	-3.59
Pakistan	-1.53	9.59	9.90	1.51	-4.55	-3.36	15.71	2.37	-15.00
Panama	18.55	11.32	11.05	22.01	-0.93	-5.59	4.99	24.21	14.80
Peru	15.23	15.20	0.80	6.85	7.11	-0.73	1.33	6.92	5.79
Philippines	12.76	4.95	12.60	6.75	-2.68	-7.83	20.97	-2.54	8.54
Senegal	6.91	2.05	-3.25	-0.08	1.85	5.71	2.55	-4.30	4.50
Swaziland	-9.32	2.85	1.49	-1.11	-19.22	-3.43	-8.32	19.74	-22.74
Tajikistan	22.60	2.90	6.42	-1.35	16.04	7.11	6.64	6.22	5.86
Thailand	9.60	4.21	9.15	7.82	5.09	-12.50	14.69	9.49	3.08
Ukraine	21.30	-11.20	-5.60	3.20	5.70	-22.00	4.50	2.70	-5.60
Uzbekistan	28.13	11.97	16.80	39.91	37.36	-3.94	6.62	20.46	-5.56
Vietnam	25.62	17.78	11.20	12.50	13.70	-5.09	8.45	10.78	15.71

Source: World Bank

About MINZAS

The MINZAS Program is a partnership program between the Mekong Institute and the New Zealand Embassy in Bangkok. The objective of this program is to enhance the research capacity of young GMS researchers by providing a structured learning and field research application program for 36 master's degree students from provincial universities in Cambodia, Lao PDR, Myanmar and Thailand.

Through a comprehensive support program, training, roundtable meetings, constructive advice from MI faculty and financial support have been provided to scholarship grantees and the conduction of research. The completed research works will be published in the 'MI Working Paper Series' and disseminated to related agents among the GMS.

The MINZAS Program consists of three annual cycles, each of which is divided into four phases:

- Phase One: Training on Research Methodology
- Phase Two: Implementation of Subregional Research in Respective Countries
- Phase Three: Research Roundtable Meetings
- Phase Four: Publication and Dissemination of Students' Works in 'MI Working Paper Series'

The research cycle involves:

- A one-month training course on GMS Cooperation and ASEAN Integration, research development and methodology. The students will produce their research designs and action plans as training outputs;
- Technical assistance and advisory support to MINZAS scholars by experienced mentors and academicians in the course of the research process;
- The scholars will present their research papers at a roundtable meeting attended by subject experts and their peers;
- Scholars will revise their research papers and improve as necessary, based on experts and peer review during the roundtable meeting;
- Publication of reports in the MI Working Paper Series.

Mekong Institute (MI) is an intergovernmental organization with a residential learning facility located on the campus of Khon Kaen University in the northeastern Thailand. It serves the countries of the Greater Mekong Subregion (GMS), namely, Cambodia, Lao P.D.R., Myanmar, Thailand, Vietnam, Yunnan Province and Guangxi Zhuang Autonomous Region of PR. China.

MI is the only GMS-based development learning institute, chartered by the six GMS Governments, offering standard and on-demand capacity development programs focusing on regional cooperation and integration issues.

Our programs and activities focus on three main thematic areas: Trade and Investment Facilitation, Agricultural Development and Commercialization, and Innovation and Technological Connectivity. Gender equality, Environmental sustainability and Labor mobility are present throughout as cross-cutting themes.

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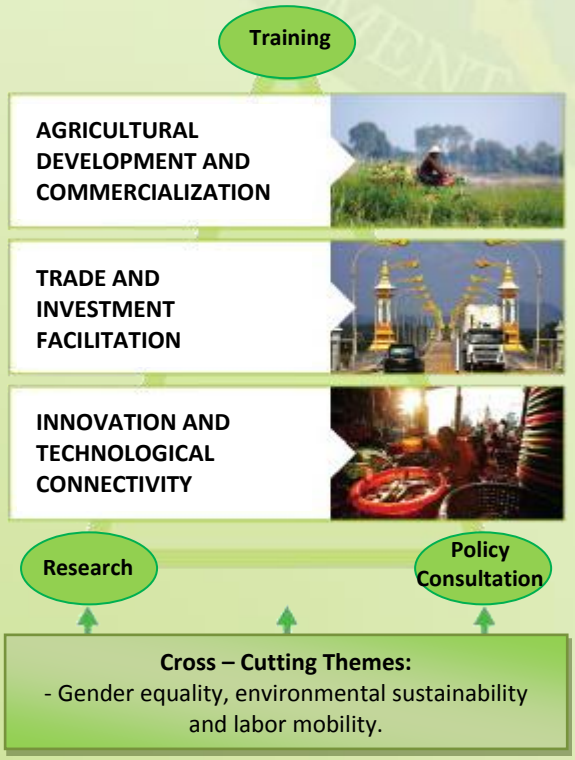
Capable and committed human resources working together for a more integrated, prosperous and harmonious GMS.

Mission

To contribute through human resource development and capacity building to the acceleration of sustainable economic and social development and poverty alleviation in the Greater Mekong Sub-region and promote regional cooperation and integration.

MI Program Thematic Areas



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