Article title: Cointegration FDI to Economy Growth
Authors: Ivan Sudibyo[1]
Affiliations: university of indonesia[1]
Orcid ids: 0000-0001-6394-3813[1]
Contact e-mail: ivansudibyo14@gmail.com

Links to data: https://osf.io/5vq3r
Funder(s): -
DOI: 10.14293/S2199-1006.1.SOR-.PP8RPOJ.v4
Preprint first posted online: 29 December 2023
Keywords: Cointegration, FDI, Economy Growth

Cointegration FDI to Economy Growth

Ivan Sudibyo

Faculty of Economics and Business, Universitas Indonesia

Corresponding author: ivansudibyo14@gmail.com

ABSTRACT

The contribution of foreign direct investment to economic growth is perhaps one of the most studied topics in academic research over the past five decades. However, few studies have examined both the short-term and long-term effects of this impact on developed and emerging markets, particularly during times of economic uncertainty including the global financial crisis. This research adopts a quantitative approach with the aim of analysing the relationship between Foreign Direct Investment (FDI), Outward Foreign Direct Investment (OFDI), and economic growth in ASEAN3+ countries and the United States during the period 1970-2020. The research population involves 10 countries, namely Southeast Asian countries, Japan, Korea, China, and the United States. The data used are secondary data obtained from the World Bank, focusing on the dependent variable GDP of each country and the independent variables OFDI and FDI of the sample countries. The analysis method involves regression and the Johansen cointegration test to measure the direct influence of FDI and OFDI on economic growth. The research results indicate that both variables are cointegrated with economic growth. Additionally, both FDI and OFDI also have a positive and significant impact on economic growth.

Keywords: Foreign Direct Investment, Outward Foreign Direct Investment, Economic Growth.

JEL Classification:

1. Introduction

The relationship between foreign direct investment (FDI) and economic growth has attracted the attention of academia and governments in developing countries. Since economic growth is one of the main goals, policies related to FDI attraction have been prioritized in the process of economic growth and development in these countries (Vo et al. 2019). Many find that FDI reduces the imbalance between saving and investment and provides the technology used to produce goods and services. In addition, FDI improves tax revenues as well as human capital (Buckley et al. 2002). From another perspective, it can be argued that FDI is one of the important factors of economic integration, as it increases long-term benefits and connections between different countries.

On the one hand, various positive effects of FDI on the economy have been discussed among scholars. FDI not only diversifies the recipient's capital structure, but also provides positive externalities such as technology and knowledge diffusion (Mansfield and Romeo 1980; Markusen and Venables 1999; Blomström et al. 1994; Caves, Richard E., 1974). Markusen and Venables (1999) stated that the effects of FDI on the home economy may operate through many different channels. Their paper provides a simple analysis of just two of these. Product market competition, through which multinationals may substitute for domestic firms, and linkage effects, through which multinationals may be complementary.

There is a wealth of theoretical and empirical literature on the relationship between foreign direct investment (FDI) and growth. Although there are many factors that determine FDI

inflows into developing countries, recent empirical studies reviewed in De Mello (1997) show that one of the most important determinants of FDI inflows is into developing countries in recent years is the process of privatization and globalization of production. In addition, a number of factors, including the degree of political stability, the nature of government policy, the trade and investment regime, the openness of the host country, and the size of the market, are factors can determine FDI inflows. With the advent of liberalization, FDI has played a more important role in developing countries in recent years. The World Bank's Global Development Finance (1999) shows that FDI inflows to developing countries more than sixfold between 1990-1998 (Chakraborty and Basu, 2002).

Chakraborty and Basu (2002), focusing on the relationship between FDI and growth in India. Starting in the mid-1980s with Rajiv Gandhi's outward-looking industrialization policy, India began to liberalize its economy with the rest of the world at a rapid pace. Since the early 1990s, FDI inflows have played an increasingly important role in the economy. Although each country has its own characteristics and strengths to utilize capital for economic growth, FDI still plays a key role in the main factors that directly affect growth. FDI is the key to global economic integration, ensuring financial stability, stimulating economic growth and improving social welfare (Borensztein et al. 1998; Nguyen et al. 2019).

The relationship between FDI and economic growth has received much attention from scholars around the world (Basu et al. 2003; Vo et al. 2019). It is widely recognized that this relationship has been studied extensively using data from a single country or a sample of several countries. Unfortunately, there is no consensus on experimental results among researchers. Regarding the country-by-country survey, Koojaroenprasit (2012) examined the impact of FDI on economic growth in Korea in the period 1980-2009. The author finds a strong positive effect of FDI on economic growth in Korea, while human capital, exports and employment also positively affect growth afterwards. Similar observations are found in Pakistan with a positive long-run effect of foreign capital inflows on economic growth (Shahbaz and Rahman 2010).

In addition to studies focusing on individual country data, various studies have been conducted using transnational data. Tiwari and Mutascu (2011) show that FDI and international trade supported the economic growth of 23 Asian countries in the period 1986-2008. More importantly, they find a profound effect of FDI on growth as an economy develops. Borensztein et al. (1998) examined the role of FDI in the economic growth of developing countries. Their findings indicate that FDI is an effective mediator between technology and economic growth. In addition, they also argue that the role of FDI will be more effective for the economy if the country concerned has high human capital. Omran and Bolbol (2003) show both a high correlation and a significant causal relationship between FDI and economic growth in Arab countries through causality test and OLS regression, respectively. They also concluded that the economic and political situation in the region is an important factor in determining the influx of FDI, along with policies that focus on the attractiveness of FDI.

Alfaro et al. (2004) affirms that FDI is one of the important factors of economic growth for 20 countries of the Organization for Economic Cooperation and Development (OECD). Furthermore, their empirical results show that in these countries, the level of financial market development is important for the relationship between FDI and economic growth. Basu et al. (2003) considered a two-way relationship between FDI and economic growth for 23 developing countries in the period 1978-1996. They find that FDI and economic growth move together in the long run or are co-integrated after accounting for heterogeneous country effects. Furthermore, their empirical results indicate that there is a two-way causal relationship between these two variables for economies with a higher degree of economic openness, but there is a one-way causality that runs from GDP to FDI for closed economies.

The research of Jyun Yi and Chih Chiang (2008) with threshold regression show that FDI can promote economic growth when the host country has achieved a certain threshold of development, initial GDP and human capital. This is perhaps indicative of the recipient countries learning and/or benefiting from foreign investors. Thus, initial GDP and human capital are important factors for FDI that are consistent with Borensztein et al. (1998).

The research of Dinh, T. T. H., et.al., (2019) can be summarized as follows. Firstly, FDI inflows can hinder a country's economic growth in the short term, but also have positive effects in the long run. Second, domestic credit to the private sector negatively affects economic growth in the short run, while money supply has been identified as having both short and long term positive effects on economic growth. economic growth. In the long run, human capital, total domestic investment and domestic credit from the private sector have a positive impact of on economic growth. Therefore, it can be concluded that in the long run, foreign direct investment is an important factor in economic growth, especially for emerging and developing economies. Efforts to attract foreign direct investment should be encouraged to supplement domestic investment in low- and middle-income developing economies. However, it should be considered that policies for attracting FDI need to be formulated from a long-term perspective to maximize the positive impact of FDI on a country's economy. Policies aimed at attracting FDI at all costs in the short term will not bring fundamental benefits to the economy. Low-middle-income developing countries have tried to attract FDI in order to reap positive benefits. The impact of FDI on economic growth is not always positive as it depends on the characteristics of the investment generated by FDI, such as type, sector, scale, duration, share of domestic enterprises in the sector, etc. Governments should implement policies to improve the quality of human resources and labour skills. Since FDI is always accompanied by technology, a highly skilled workforce is required to use the new technology and create a positive technology diffusion effect.

Dierk Herzer (2008) has examined the long-run relationship between outward FDI on domestic output using panel cointegration techniques in 14 industrialized countries over the period 1971–2005. The researcher found that outward FDI has positive long-run effects on domestic output. In addition, the results show that the long-run causality is bidirectional, suggesting that increases in domestic output in turn allow firms to invest more abroad. Consequently, increased outward FDI is both a cause and a consequence of increased domestic output. Dierk Herzer (2011) examined the long-run relationship between outward FDI and domestic output for developing countries, a relationship that has not yet been explored in the literature. The researcher data cover the period 1981 to 2008 (T = 28) and the researcher include all developing countries for which continuous data are available, leading to a sample of 43 countries (N = 43). To test for cointegration, the researcher used the panel and group Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests, as well as the panel trace test developed by Larsson et al. (2001). To estimate the long-run effect of outward FDI on domestic output, the researcher use the Dynamic Ordinary Least Squares (DOLS) estimator. From the results it can be concluded that outward FDI has, in general, a positive long-run effect on domestic output in developing countries.

Apergis (2008) examines empirically the association between foreign direct investment inward and foreign direct investment outward. The author used a panel data set for 35 economies over the period 1981-2004 as well as the methodology of panel unit root and panel cointegration tests with a certain number of structural changes, the empirical findings showed that FDI inward does exhibit a significant (long-run) relationship with FDI outward.

Desbordes, R., et.al. (2019) investigated how intra- and inter-industry FDI influences the average productivity of a sample of emerging market economies. Overall, the authors find a large positive effect of intra-industry FDI on total and export related labour productivity. This result suggests that foreign firms raise the performance of their host economies through a direct compositional effect. Foreign firms tend to be larger than domestic firms; they make more

intensive use of (possibly better) physical capital, human capital, and intermediates; and they have greater access to foreign markets. Hence, their greater prevalence in a given sector mechanically increases average labour productivity and export performance. In addition to improving their FDI attractiveness, governments should also ensure that they adopt policies that increase the quantity, quality, and technological level of local producers. This will leverage the benefits of FDI and sustain long-run economic development. These considerations led the Government of the PRC to introduce in 2006 and 2015, respectively, the Indigenous Innovation and Made in China 2025 policy packages to upgrade domestic manufacturing.

Keller, et.al. (2009) estimate international technology spillovers to U.S. manufacturing firms via imports and foreign direct investment (FDI) between 1987 and 1996. The results suggest that FDI leads to substantial productivity gains for domestic firms. The size of FDI spillovers is economically important, accounting for about 14% of productivity growth in U.S. firms between 1987 and 1996. FDI spillovers are particularly strong in high-tech sectors, whereas they are absent in low-tech sectors. The authors estimate positive coefficients for contemporaneous and one period lagged FDI. The FDI-size interactions are negative, and the one-year lagged estimate is significant. This suggests that smaller firms benefit more from FDI spillovers than larger firms do.

2. Research Methodology and Data

This research adopts a quantitative approach with the aim of analyzing the relationship between Foreign Direct Investment (FDI), Outward Foreign Direct Investment (OFDI), and economic growth in ASEAN3+ countries and the United States during the period 1970-2020. The research population involves 10 countries, namely Southeast Asian countries, Japan, Korea, China, and the United States. The data used are secondary data obtained from the World Bank, focusing on the dependent variable GDP of the ASEAN3+ countries and the United States and the independent variables is OFDI and FDI of the sample countries. The analysis method involves multiple regression to measure the direct influence of FDI on economic growth. Additionally, the Johansen cointegration test is employed to evaluate whether there is a cointegrating relationship between the two variables, providing insights into their long-term relationship.

The multiple regression equation utilized in this study is as follows:

$$GDP\$ = \beta_0 + \beta_1 ASEAN3\ and\ US + \varepsilon_t$$

Meanwhile, the equation for the Johansen cointegration method is as follows:

$$Y_t = \beta_0 + \beta_1 X_t + \gamma_1 Z_{t-1} + \gamma_2 Z_{t-2} + \cdots + \gamma_{p-1} Z_{t-(p-1)} + \varepsilon_t$$

In the equation above:

- Y_t is the dependent variable (e.g., GDP$).
- X_t is the independent variable (e.g., FDI and OFDI of ASEAN3+ countries and US).
- Z_t is the time vector of control variables or lagged values.
- β_0 is the intercept.
- β_1 is the coefficient of regression between Y_t and X_t
- $\gamma_1, \gamma_2, \ldots \gamma_{p-1}$ is the cointegration coefficient measures the long-term relationship between Y_t and X_t
- ε_t is the residual, which represents the random error.

The equation above reflects the long-term relationship between the dependent and independent variables, and the Johansen cointegration test will provide information about the presence and number of cointegration vectors (γ) in this system. The results of this analysis are expected to provide an in-depth understanding of the cointegration dynamics between OFDI, FDI, and economic growth in ASEAN3+. The use of multiple regression provides a detailed overview of the impact of OFDI and FDI on the GDP, while the Johansen cointegration test explores the long-term relationship between these three variables. The combination of both is expected to make a significant contribution to scientific understanding and economic policy in the ASEAN3+ region.

3. Results and Discussions

Foreign Direct Investment (FDI) is a form of international investment in which economic entities from one country make direct investments in another country. FDI involves active participation in the management and ownership of companies or business projects in the destination investment country. FDI reflects a company's desire to gain long-term profits, access new markets, improve production efficiency, and often transfer technology and specific expertise. Meanwhile, Outward Foreign Direct Investment (OFDI) is the opposite of FDI. OFDI refers to direct investments made by economic entities from one country to foreign countries. In the context of OFDI, the home country becomes the source of investment, while the destination country becomes the recipient of the investment. Common goals of OFDI include risk diversification, access to global markets, acquiring natural resources or technology not available in the home country, and building international business relationships. FDI is more focused on achieving profits and benefits from a direct presence in the target investment market, while OFDI emphasizes risk diversification and business expansion at the global level. These differences reflect how economic entities participate in cross-border investment activities and the extent to which they are involved in managing and owning assets in foreign countries.

This research employs GDP in US dollars as the dependent variable due to its advantage in enabling the measurement of economic impact in absolute terms. This provides a more concrete understanding of how much FDI and OFDI can quantitatively influence the economy, particularly because the study also emphasizes direct investment analysis and international comparisons. In a global context, the use of US dollars facilitates cross-country comparisons and allows this research to more effectively investigate global financial flows and the economic impact of a country within the global economic scenario.

Johansen Cointegration

Cointegration tests can serve as the basis for determining whether the equations used have long-term equilibrium or not. If the equations are proven to be cointegrated through the Johansen test, then those estimated equations have long-term equilibrium (Gujarati, 2003). The Johansen cointegration test, in the context of this study with the dependent variable GDP of the US and the independent variables FDI and OFDI of ASEAN 3+, plays a crucial role in evaluating whether there is a long-term cointegrating relationship between foreign direct investments (FDI and OFDI) from ASEAN3+ countries and the economic growth of the United States. The following are the results of the Johansen cointegration test at a critical value of 0.05 or 5% level:

Table 3.1 Johansen Cointegration Test for FDI Based on Trace Statistic

Variable	Trace Statistic		Prob.**	
	None	At most 1	None	At most 1
USA	36.05381	12.01087	0.0000*	0.0005*
CHN	49.80346	8.156173	0.0000*	0.0043*
KOR	8.826207	3.974212	0.3817	0.0462*
JPN	4.274147	0.038011	0.8802	0.8454
SGP	18.10606	0.015663	0.0198*	0.9003
THA	11.01881	1.735176	0.2103	0.1878
MYS	14.16672	2.323672	0.0785	0.1274
PHL	23.95213	2.302190	0.0021*	0.1292
VNM	29.06748	5.398002	0.0003*	0.0202*
IDN	17.82066	3.116564	0.0219*	0.0775
Critical	None:	At most 1:		
Value 5%	15.49471	3.841466		

Source: Data analysis results, 2023

Table 3.2 Johansen Cointegration Test for FDI Based on Maximum Eigenvalue

Variable	Max-Eigen Statistic		Prob.**	
	None	At most 1	None	At most 1
USA	24.04294	12.01087	0.0011*	0.0005*
CHN	41.64729	8.156173	0.0000*	0.0043*
KOR	4.851995	3.974212	0.7604	0.0462*
JPN	4.236136	0.038011	0.8336	0.8454
SGP	18.09040	0.015663	0.0118*	0.9003
THA	9.283638	1.735176	0.2633	0.1878
MYS	11.84305	2.323672	0.1167	0.1274
PHL	21.64994	2.302190	0.0029*	0.1292
VNM	23.66947	5.398002	0.0013*	0.0202*
IDN	14.70410	3.116564	0.0426*	0.0775
Critical	None:	At most 1:		
Value 5%	14.26460	3.841466		

Source: Data analysis results, 2023

The Johansen cointegration test is conducted with the condition that if the trace statistic or max-eigen value statistic is greater than the critical value at a confidence level of $\alpha = 5\%$, or has a probability value < 0.05, then the test results indicate the presence of a cointegration equation, implying long-term equilibrium. Based on the table, it is evident that there are 7 countries exhibiting cointegration or long-term equilibrium with economic growth. These countries include the United States, China, Singapore, Korea, Philippines, Vietnam, and Indonesia.

Table 3.3 Johansen Cointegration Test for OFDI Based on Trace Statistic

Variable	Trace Statistic		Prob.**	
	None	At most 1	None	At most 1
USA	12.73479	2.085998	0.1249	0.1487
CHN	31.70590	0.087166	0.0001*	0.7678
KOR	12.92306	2.033534	0.1177	0.1539
JPN	10.03131	2.007724	0.2783	0.1565
SGP	27.17935	0.316041	0.0006*	0.5740
THA	9.456735	0.002002	0.3248	0.9609
MYS	21.44038	0.121275	0.0056*	0.7276
PHL	21.61530	0.029133	0.0053*	0.8644
VNM	22.26311	0.153115	0.0041*	0.6956
IDN	14.59643	0.005416	0.0680	0.9406
Critical	None:	At most 1:		
Value 5%	15.49471	3.841466		

Source: Data analysis results, 2023

Table 3.4 Johansen Cointegration Test for OFDI Based on Maximum Eigenvalue

Variable	Max-Eigen Statistic		Prob.**	
	None	At most 1	None	At most 1
USA	10.64879	2.085998	0.1727	0.1487
CHN	31.61873	0.087166	0.0000*	0.7678
KOR	10.88953	2.033534	0.1598	0.1539
JPN	8.023584	2.007724	0.3763	0.1565
SGP	26.86331	0.316041	0.0003*	0.5740
THA	9.454732	0.002002	0.2503	0.9609
MYS	21.31910	0.121275	0.0033*	0.7276
PHL	21.58616	0.029133	0.0029*	0.8644
VNM	22.11000	0.153115	0.0024*	0.6956
IDN	14.59101	0.005416	0.0444*	0.9406
Critical	None:	At most 1:		
Value 5%	14.26460	3.841466		

Source: Data analysis results, 2023

In contrast to FDI, according to the table, it is observed that there are 6 ASEAN3+ countries with OFDI that are cointegrated or have long-term equilibrium with economic growth. These countries are China, Singapore, Malaysia, the Philippines, Vietnam, and Indonesia.

Linear Regression

The linear regression method is employed in this study to analyse and directly identify the causal relationship between Foreign Direct Investment (FDI) and Outward Foreign Direct Investment (OFDI) in ASEAN 3+ countries with economic growth, where the dependent variable is GDP US. The results of the regression tests are presented in the following table:

Table 3.5 Regression Test Results of FDI for ASEAN 3+ on GDP US

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-Square
USA_FDI	38.03458	2.963745	12.83328	0.0000	0.77432
CHN_FDI	40.22781	3.512758	11.45192	0.0000	0.770786
KOR_FDI	91.07318	7.974414	11.42067	0.0000	0.730990
JPN_FDI	92.07584	24.53858	3.752289	0.0005	0.226800
SGP_FDI	3.761422	0.174857	21.51137	0.0000	0.906019
THA_FDI	27.84026	3.310681	8.409224	0.0000	0.595670
MYS_FDI	25.25587	1.869460	13.50971	0.0000	0.791768
PHL_FDI	36.82671	2.545636	14.46660	0.0000	0.813435
VNM_FDI	15.14967	0.643522	23.54182	0.0000	0.943803
IDN_FDI	38.79182	2.395464	16.19387	0.0000	0.845282

Source: Data analysis results, 2023

Based on Table 3.5, the probability values of all variables imply that FDI in ASEAN3+ countries has a positive and significant impact on economic growth, with probabilities for each variable < 0.05. The R-Square values also indicate a substantial percentage of influence. Vietnam has the highest R-Square value at 0.943, meaning approximately 94.3% of the variation in the dependent variable can be explained by the independent variables in the regression model. In other words, this regression model effectively explains and predicts about 94.3% of the changes in the dependent variable, while the remaining 5.7% is influenced by other variables. Japan has the smallest R-Square value at 0.226, signifying that 22.6% of the variation in the dependent variable can be explained by the independent variables in the regression model.

Table 3.6 Regression Test Results of OFDI for ASEAN 3+ on GDP US

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-Square
USA_OFDI	28.76789	4.077593	7.055115	0.0000	0.503921
CHN_OFDI	76.21120	5.200216	14.65539	0.0000	0.853047
KOR_OFDI	42.43975	1.949036	21.77474	0.0000	0.908071
JPN_OFDI	20.44283	3.397984	6.016164	0.0000	0.424844
SGP_OFDI	6.149292	0.433216	14.19451	0.0000	0.810853
THA_OFDI	26.73372	2.070357	12.91261	0.0000	0.791208
MYS_OFDI	17.83129	1.806947	9.868187	0.0000	0.683947
PHL_OFDI	52.70175	4.764128	11.06220	0.0000	0.744483
VNM_OFDI	99.07161	23.85076	4.153814	0.0005	0.463147
IDN_OFDI	49.94921	12.38306	4.033674	0.0002	0.294380

Source: Data analysis results, 2023

Table 3.6 indicates that OFDI in ASEAN3+ countries also has a positive and significant impact on economic growth. This is evident from the regression test results with probability values < 0.05. The R-Square values for each variable also show substantial figures. Korea has the highest R-Square value at 0.908, meaning approximately 90.8% of the variation in the dependent variable can be explained by the independent variables in the regression model. In other words, this regression model effectively explains and predicts about 90.8% of the changes in the dependent variable, while the remaining 9.2% is influenced by other variables.

Discussions

Foreign Direct Investment (FDI) and Outward Foreign Direct Investment (OFDI) are two factors that are always associated with the economic growth of a country. The results of this study indicate that both FDI and OFDI in ASEAN 3+ countries exhibit cointegration and have a significant impact on economic growth. FDI is linked to economic growth because it brings capital, technology, and managerial skills that enhance productivity and efficiency. This is

supported by several studies that show a positive relationship between FDI and economic growth, as FDI can improve productivity and efficiency while providing the necessary capital and technology for economic development (Alfaro et al., 2004; Siddiqui and Ahmed, 2019).

FDI can also enhance competitiveness and innovation in the receiving country, which, in turn, can drive economic growth (Narayan et al., 2022). Meanwhile, Outward Foreign Direct Investment (OFDI), also known as foreign direct investment from abroad, is also associated with economic growth. Several studies indicate that OFDI can have a positive impact on economic growth, especially in terms of technology transfer, increased productivity, and job creation. Additionally, OFDI can help expand markets for companies from the home country, thereby stimulating economic growth in the destination investment country (Zhou, 2020; Sahoo and Dash, 2022).

Furthermore, Foreign Direct Investment (FDI) and Outward Foreign Direct Investment (OFDI) in ASEAN3+ countries are always interconnected. This is due to similar investment policies in the region. Moreover, economic integration and cooperation among ASEAN countries enable mutual influences in investment flows among member countries. Similar investment policies and incentives in ASEAN countries can also influence the flow of FDI in the region (Triatmanto et al., 2023).

Conclusions

Based on the results of the Johansen cointegration test and linear regression conducted on FDI and OFDI in ASEAN3+ countries, it is found that there is cointegration or a long-term relationship with economic growth. Additionally, both variables also have a positive and significant impact on economic growth. This is because FDI brings capital, technology, and managerial skills that enhance productivity and efficiency. Moreover, OFDI can also help expand markets for companies from the home country, which, in turn, can stimulate economic growth in the destination investment country. Therefore, the government can take several steps to continue supporting economic growth through FDI and OFDI. First, the government can provide fiscal incentives and improve the business climate to attract foreign investment and support OFDI. Second, the government can pay attention to their fiscal policies, including budget deficit management and optimizing the use of loans to enhance economic growth. Third, the government can increase spending on education and health to improve the Human Capital Index (HCI) and reduce poverty. Fourth, the government can focus on the quality of human resources and infrastructure to support technology transfer and enhance productivity. For the further research could be produced to make some detailed research of empirical association between inward foreign direct investment, outward foreign direct investment and economy growth in each country.

References

Alfaro, Laura, Areendam Chanda, Sebnem Kalemli-Ozcan, and Selin Sayek. 2004. FDI and economic growth: The role of local financial markets. J. Int. Econ. 64: 89–112.

Apergis, N. (2008). Foreign direct investment inward and foreign direct investment outward: Evidence from panel unit root and cointegration tests with a certain number of structural changes. Global Economy Journal, 8(1), 1850125.

Backus, David K., Patrick J. Kehoe, and Finn E. Kydland. 1992. International real business cycles. J. Political Econ. 100: 745–75

Basu, Parantap, Chandana Chakraborty, and Derrick Reagle. 2003. Liberalization, FDI, and growth in developing countries: A panel cointegration approach. Econ. Inq. 41: 510–16.

Blomström, Magnus, Ari Kokko, and Mario Zejan. 1994. Host country competition, labor skills, and technology transfer by multinationals. Rev. World Econ. 130: 521–33.

Borensztein, Eduardo R., José R. de Gregorio, and Jongwha Lee. 1998. How Does Foreign Direct Investment Affect Economic Growth? Available online: https://www.nber.org/papers/w5057.pdf

Bosworth, Barry P., Susan M. Collins, and Carmen M. Reinhart. 1999. Capital flows to developing economies: Implications for saving and investment. Brook. Pap. Econ. Act. 1: 143–80.

Buckley, Peter J., Jeremy Clegg, Chengqi Wang, and Adam Cross. 2002. FDI, regional differences and economic growth: Panel data evidence from China. The challenge of international business. Transnatl. Corp. 11: 1–28.

Caves, Richard E. 1974. Multinational firms, competition, and productivity in host-country markets. Economica 41: 176–93.

Chandana Chakraborty & Parantap Basu (2002) Foreign direct investment and growth in India: a cointegration approach, Applied Economics, 34:9, 1061-1073, DOI: 10.1080/00036840110074079

Luiz R. de Mello Jr. (1997) Foreign direct investment in developing countries and growth: A selective survey, The Journal of Development Studies, 34:1, 1-34, DOI: 10.1080/00220389708422501

Dinh, T. T. H., Vo, D. H., & Nguyen, T. C. (2019). Foreign direct investment and economic growth in the short run and long run: Empirical evidence from developing countries. Journal of Risk and Financial Management, 12(4), 176.

Herzer, Dierk. (2008). The long-run relationship between outward FDI and domestic output: Evidence from panel data. Economics Letters, 100(1), 146-149.

Herzer, Dierk. (2011): The long-run effect of outward FDI on domestic output in developing countries, Applied Economics Letters, 18:14, 1355-1358

Jyun-Yi, Wu, and Hsu Chih-Chiang. 2008. Does foreign direct investment promote economic growth? Evidence from a threshold regression analysis. Econ. Bull. 15: 1–10.

Keller, W., & Yeaple, S. R. (2009). Multinational enterprises, international trade, and productivity growth: firm-level evidence from the United States. The review of economics and statistics, 91(4), 821-831.

Keller, Wolfgang, Yeaple, Stephen R; Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence from the United States. *The Review of Economics and Statistics* 2009; 91 (4): 821–831. doi: https://doi.org/10.1162/rest.91.4.821

Koojaroenprasit, Sauwaluck. 2012. The impact of foreign direct investment on economic growth: A case study of South Korea. Int. J. Bus. Soc. Sci. 3: 8–19.

Larsson, R., Lyhagen, J., & Löthgren, M. (2001). Likelihood-based cointegration tests in heterogeneous panels. Econometrics Journal, 4(1), 109–142. doi:10.1111/1368-423x.00059

Mansfield, Edwin, and Anthony Romeo. 1980. Technology transfer to overseas subsidiaries by US-based firms. Q. J. Econ. 95: 737–50.

Markusen, James R., and Anthony J. Venables. 1999. Foreign direct investment as a catalyst for industrial development. Eur. Econ. Rev. 43: 335–56.

Narayan, P., Rath, B., & Syarifuddin, F. (2022). Understanding the role of trade agreements in Indonesia's FDI. Journal of Asian Economics, 82(1).

Nguyen, Ha Minh, Ngoc Hoang Bui, and Duc Hong Vo. 2019. The Nexus between Economic Integration and Growth: Application to Vietnam. Annals of Financial Economics 14: 1950041.

Omran, Mohammed, and Ali Bolbol. 2003. Foreign direct investment, financial development, and economic growth: Evidence from the Arab countries. Rev. Middle East. Econ. Financ. 1: 231–49.

Desbordes,R., Franssen, L.; Foreign Direct Investment and Productivity: A Cross-Country, Multisector Analysis. Asian Development Review 2019; 36 (1): 54–79. doi: https://doi.org/10.1162/adev_a_00123

Sahoo, P., & Dash, R. (2022). Does FDI have differential impacts on exports? Evidence from developing countries. International Economics, 172(1), 227 – 237. https://doi.org/10.1016/j.inteco.2022.10.002

Shahbaz, Muhammad, and Mohammad Mazur Rahman. 2010. Foreign capital inflows-growth nexus and role of domestic financial sector: An ARDL co-integration approach for Pakistan. J. Econ. Res. 15: 207–31.

Siddiqui, D. A., & Ahmed, Q. M. (2019). Foreign direct investment, foreign debt and economic growth: A case of Pakistan. Journal of Asian Development, 5(1), 1-18.

Tiwari, Aviral Kumar, and Mihai Mutascu. 2011. Economic growth and FDI in Asia: A panel-data approach. Econ. Anal. Policy 41: 173–87.

Triatmanto, B., Bawono, S., & Wahyuni, N. (2023). The contribution and influence of total external debt, FDI, and HCI on economic growth in Indonesia, Thailand, Vietnam, and Philippines. Research in Globalization, 7, 100163.

Vo, Duc Hong, Anh The Vo, and Zhaoyong Zhang. 2019. Exchange Rate Volatility and Disaggregated Manufacturing Exports: Evidence from an Emerging Country. J. Risk Financ. Manag. 12: 12.

Zhou, C. (2020). The effects of outward FDI and export on firm productivity in emerging markets: Evidence from matching approach. Economics Letters, 195(1). https://doi.org/10.1016/j.econlet.2020.109462