

Impacts of Foreign Direct Investment on the Economic Growth of Some European Countries in the Context of the Covid-19

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ABSTRACT This study reviewed the impacts of foreign direct investment (FDI) on the economic growth of 7 European countries with panel data models in the context of the strong impact of the Covid-19 pandemic on macroeconomic growth and stability. Data was collected from the first months of 2021 from the IMF and ILO of 8 countries including Germany, Sweden, Netherlands, Finland, Italy, Switzerland, France, and Spain. The results showed that FDI has made an important contribution to the GDP growth of these countries, becoming an important solution in ensuring growth, stabilizing the macro-economy, and helping these countries increase their economy's resilience against the pandemic.

INTRODUCTION

Foreign Direct Investment (FDI) is an investment activity with a link in the long run, reflecting the long-term benefits and control of foreign investors or parent companies over their enterprises in another economy (United Nations Conference on Trade and Development (UNCTAD) 1999). FDI reflects the long-term benefits that an entity in one economy (direct investor) obtains through an economic establishment in one economy other than that of the investor's home country (directly invested enterprise). This long-term interest represents relationships between the investor and the directly invested enterprise, in which the investor gains significant and effective influence in the enterprise management. Direct investment involves the initial transactions, followed by capital transactions between two closely linked entities. In particular, direct investors are understood as those holding control of 10 percent or more of the capital of an enterprise. It can be seen from this concept of UNCTAD (1999) that the main motivation of FDI investors is through the capital used abroad, foreign investors gain control or certain influence in the enterprise management.

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The Covid-19 pandemic appeared at the end of 2019 and has had a strong impact on almost all economies in the world in general, and The EU countries in particular. Especially in the context of supply chain disruptions and countries' economies facing macro imbalances, attracting FDI is one of the essential solutions in the policy administration of the Governments. FDI attraction allows attracting more capital flows from the outside, positively affecting macroeconomic variables, which becomes an important channel in the context that investment flows are also strongly affected by the Covid-19 pandemic. This study would review several factors affecting the FDI of 7 European countries including Sweden, Netherlands, Germany, France, Switzerland, Spain, and Italy in 2021.

Literature Review

The Relationship between FDI and Economic Growth

Gao (2005) developed a model combining elements of the new economic geography model and the endogenous growth model. In the process of economic integration, economic growth and FDI are determined simultaneously. With the relocation of firms' output to the periphery countries, the wage rate declines due to the release of resources

from production output in the manufacturing hub. As a result, research and development in open innovation countries can reduce innovation costs, ultimately causing world growth to increase. It reduces barriers so that trade and transportation are better, and means of communication enhance the capacity of international outsourcing in software processing. Therefore, more resources are diverted to technological innovation activities in advanced countries. Such a development can increase the rate of economic growth in the world.

The study by Dinh et al. (2019) researched both the short-term and long-term impact of FDI on economic growth in developing and emerging countries from 2000 to 2014, especially during periods of economic uncertainty including the global financial crisis. Various econometric methods are used such as panel-based unit root test, Johansen cointegration test, Vector Error Correction Model (VECM) and Fully Modified OLS (FMOLS) to ensure the certainty of the results. The results of this study show that FDI helps stimulate economic growth in the long-term. Although it has negative short-term effect in the on the countries in this study. Other macroeconomic factors also play an important role in explaining economic growth in these countries. In addition, long-term economic growth is driven by money supply, human capital, total domestic investment, and domestic credit for the private sector.

This study is based on Romanian annual data for the period 1991-2018 on inward FDI (USD million) provided by UNCTAD, while the rest of the variables are obtained from EUROSTAT and the World Bank Dataset. Research by Ciobanu (2021) examined the impact of FDI on GDP growth, as well as the causal relationships between GDP, trade openness, labor force and FDI in the case of Romania over the past decades. The ARDL constraint is an experimental method used to study the existence of a long-term relationship between FDI, trade, labor and economic growth. The results showed that there is cointegration between the variables when real GDP and foreign direct investment are the dependent variables. Foreign direct investment, open trade and the labor force are the main factors of long-term economic growth in Romania.

With a panel dataset covering 45 African countries for the period from 1980 to 2016 to examine causal links, with the application of the Granger Non-causal test, Ibrahim and Acquah

(2021) found that the causal relationship between FDI and economic growth is adjusted for the economic growth index while observing the causal feedback between (i) FDI and financial sector development, and (ii) financial sector development and economic growth.

The study by Le Bao et al. (2021) aims to investigate the relationship between foreign direct investment (FDI) and economic growth in at the provincial level using time series data in Binh Dinh (Vietnam) from 1997 to 2019. This study applied the quantitative approaches of Vector Autoregression (VAR) and Autoregressive Distributed Lag (ARDL) in the model. The results showed that economic growth positively affected FDI attraction. However, there is no evidence of FDI's impact on economic growth under low realized capital conditions. Moreover, the results also showed that the impact of FDI on economic growth is influenced by two factors: infrastructure and human capital. The lack of human capital, including trained human resources and infrastructure, is the main barrier hindering and holding back FDI's contribution to local economic growth.

The study of Sahu (2021) examines the impact of foreign direct investment (FDI) on economic growth in a group of 45 developing countries in the period 1990-2014. Using the pooled mean group (PMG), the author estimated the long-term and short-term effects of FDI inflows on GDP growth rate per capita. The PMG regression results suggested that GDP growth rate per capita and its variables are co-linked, implying the presence of a long-term equilibrium relationship between the variables. The results showed that FDI inflows have a significant positive impact on the economic growth of the host countries over the long and short terms. Research shows that the long-term impact of FDI inflows on economic growth is higher in emerging markets economies than in non-emerging markets economies. FDI inflows have a significant positive impact on long-term economic growth in Asia and Africa.

In a sample of 31 developing countries, Hansen and Rand (2006) analyzed the cause of the relationship between FDI and GDP. The study was based on standard neoclassical development to model and find a strong causal relationship between FDI and GDP in both the short run and long run. FDI is valued as a growth driver like

domestic investment and it has a lasting impact on GDP regardless of the level of development. Foreign Direct Investment (FDI) is the movement of capital or assets from abroad to the invested country. Studies showed that the important role of FDI in economic growth, the relationship between FDI and economic growth was determined by the traditional neoclassical growth models represented by the Solow (1957) model. The neoclassical growth model assumes that the labor force and scientific-technological progress are exogenous, so FDI increases domestic income levels and has no long-term effect on economic growth.

Romer (1986) based on his model to observe and argued that some types of knowledge are non-competitive, that is, they cannot be used up like normal goods and services. The nature of the idea's competition means that the rate of return on some innovation activity does not belong entirely to its creators. The knowledge that spreads from an enterprise to another has economic value, but in the aggregate economy, it does not change or increase gradually. An important implication of Romer's model is that enterprises may not invest enough in research and development because they cannot grasp the full benefits of innovation. This suggested that policies that encourage research and development such as tax exemptions for R&D spending, or government-funded research can accelerate growth. Lucas Jr (1998) supposed that the technological catch-up theory was the growth theory in open developing economies, and was consistent with the empirical evidence. Catching up technology is achieved by absorbing new and better technology from abroad through investment in imported machinery and equipment, attracting FDI, and investing in modern business and management methods in the world. Thus, technological change in developing countries is determined endogenously by investment.

In addition, FDI also has the effect of accumulating capital for countries. Besides, FDI supports long-term economic growth through technology transfer and capital accumulation but is mainly based on advanced technology. Furthermore, FDI has an impact in the long run on economic growth in invested countries through technology transfer, capital accumulation, and human capital growth (De Mello 1999). Basu and Guariglia (2007) inequality, and growth developed a growth model of a dual economy, in which the traditional sector

(agriculture) is using outdated technology, while FDI is the growth engine in the modern industrial sector. Therefore, FDI inflows can accelerate polarization between the two regions; and FDI promotes industrialization in the host country; on the other hand, FDI reduces the importance of the traditional sector (agriculture) in the overall economy. Driffield and Jones (2013) showed that both FDI and remittance flow positively affect economic growth, while ODA does not seem to support economic growth. The importance of remittance flows thereby is not less than that of FDI. In general, it can be seen that the studies all agreed that FDI has impacted economic development.

METHODOLOGY

Models

This study uses the method of estimating research model according to panel data, estimating the regression model with fixed effects (FE) and regression with random effects (RE). In addition, the study uses Hausman test (1978) test to choose a suitable model. After selecting a suitable FE model, the heteroscedasticity is overcome by the FGLS method.

The proposed mathematical model is as follows:

$$\ln GDP_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 DI_{it} + \beta_3 OPEN_{it} + \beta_4 \ln L_{it} + \varepsilon_{it}$$

Hypothesis 1: FDI has a Positive relationship with Gross domestic product;

Hypothesis 2: Domestic investment is driven by the formation of Gross Fixed Capital (GFC), has a Positive relationship with GDP;

Hypothesis 3: Economic openness has a Positive relationship with GDP;

Hypothesis 4: Human capital represented by the workforce has a Positive relationship with GDP.

The variables to be interpreted and measured are presented in Table 1.

Research Data

Research data was collected from 8 countries in the EU including Germany, Italy, Switzerland, Sweden, Finland, and the Netherlands in 2021 from the IMF and ILO websites. After data collection, this study used Stata software to perform analyzes such as descriptive statistics and regression.

Table 1: Interpretation and measurement of variables

Variable	Variable type	Measurement	Previous researches	Expected sign
lnGDP	Dependent variable	Real GDP per capita growth rate	Chee and Nair (2010)	
FDI	Independent variable	Foreign direct investment	Pravin Jadhav (2012), Mugableh (2015)	(+)
DI	Independent variable	$GFC = \frac{Fixed\ assets + \Delta\ Inventories}{Real\ GDP}$ Domestic investment is driven by the formation of Gross Fixed Capital (GFC).	Chee and Nair (2010)	(+)
OPEN	Independent variable	Economic openness $OPEN = \frac{(EX + IM)}{(Real\ GDP)}$	Muhammad and Imran (2014)	(+)
lnL	Independent variable	The workforce is used as a proxy for human capital. The total labor force is indicated by L.	Romer (1986) Samathan and Haiyun (2017)	(+)

Source: Compiled by the author

RESULTS AND DISCUSSION

Descriptive statistics include the mean, standard deviation, minimum value (min), and maximum value (max). The statistical results describing the data of observed variables are shown in Table 2.

From Table 2, it can be seen that the domestic investment variable has the highest mean (92679.02) as well as the highest standard deviation, showing that the domestic investment variable (65296.35) has the highest data dispersion. The negative mean of *FDI* indicates that the amount of *FDI* is suffering from a capital flow gap between the inflows and outflows (-6630.29).

Looking at the correlation coefficient matrix, it can be seen that only the coefficient between *DI* and *lnGDP* is highly correlated (0.8332) as given in Table 3. For the remaining variables, the correlation is low, smaller than 0.8. The degrees of correlation among the variables are lower than 0.8, showing that there is no multicollinearity among the variables.

The estimation of the model's coefficients was performed on Stata software. After testing to choose the best model, the researchers obtained the fixed effects estimation results. Then, to overcome the

problem of autocorrelation in the model, the FGLS model was used (Table 4).

Through the results of running the model, the researchers found that all variables have coefficients that are consistent with the sign expectation, and most of them have statistical significance at 5 percent. Specifically, *FDI* has a positive effect on *GDP* in the selected countries and the coefficient has statistical significance at 5 percent. Accordingly, when *FDI* increases by 1 million USD, the average *GDP* increases by nearly 1 percent. This means that in countries with large *FDI*, *GDP* growth is higher. The results are completely consistent with the studies by Sahoo (2006) and Khachoo and Khan (2012). The study of OECD in 2020 showed that *FDI* has an important contribution to *GDP* growth in European countries, such as in Germany was 51 percent, Finland was 53 percent, Italy was 31 percent, Spain was 16 percent, Sweden was 46 percent, and Switzerland was 84 percent.

The results are consistent with the research by Baiashvili and Gattini (2020), Acquah and Ibrahim (2020), Rao et al. (2020), Sahu (2021), and Ciobanu (2021). In which, research by Baiashvili and Gattini (2020) has highlighted that *FDI* has a

Table 2: Descriptive statistics table

Variable	Obs	Mean	Std. Dev	Min	Max
lnL	14	9.55	.95	7.909	10.66
FDI	14	-6630.29	13001.75	-37574.39	5002.495
OPEN	14	.824	.379	.4563129	1.659501
lnGDP	14	12.69	.984	10.781	13.94
DI	14	92679.02	65296.35	10357.43	250283.0

Source: Calculated by the author

Table 3: Correlation coefficient matrix

	<i>lnGDP</i>	<i>LnL</i>	<i>FDI</i>	<i>DI</i>	<i>OPEN</i>
<i>lnGDP</i>	1				
<i>LnL</i>	0.55	1			
<i>FDI</i>	-0.01	-0.27	1		
<i>DI</i>	0.83	0.35	0.02	1	
<i>OPEN</i>	-0.28	-0.5	-0.36	-0.29	1

Source: Calculated by the author

rising impact on growth in low-to-middle-income countries; on the other hand, it has a declining impact in high-income countries. The work of Acquah et al. (2020) showed that while FDI stimulates economic growth, financial development diminishes the positive effect of FDI on overall growth. Nguyen and Business's paper (2020), studying experimentally in Vietnam, pointed out that FDI has positive impacts and statistical significance to Vietnam's economic growth; in addition, in this research, export also has the same impact and significance, while import has negative impacts but without the statistical significance.

According to UNCTAD's (2021a) statistics on the ranking of FDI attraction by region group, Europe was ranked second after the group of developed countries with FDI attraction reaching 172 billion USD in 2017 and increasing by 384 billion USD in 2018. Data by OECD (October 2021) showed that global FDI had increased again in the first half of 2021, reaching \$870 billion, surpassing the pre-pandemic level by 43 percent and was as double as that of the second

half of 2020. In the OECD area, FDI increased to USD 421 billion, more than twice that of 2020, which is the result of substantial growth in the vast majority of OECD countries. In which, China is the largest FDI recipient country in the world, followed by the United States and the United Kingdom.

Trade openness has a positive effect on *GDP* in the countries selected for this study and is statistically significant at 5 percent. This coefficient is significant when the openness increases by 1 percent, the average *FDI* increases by nearly 2.22 percent. This implies that foreign investors are very interested in the economic openness of the host country when deciding where to invest in developing countries. In the second quarter of 2021, the European Union recorded export growth of 2.8 percent and import growth of 5.7 percent, those of France were 1.3 percent and 2.9 percent, of Germany were 1.3 percent and 6.3 percent, and of Italy were 4.0 percent and 6.4 percent. The results are consistent with the research by Romer (1986), Banday et al. (2021), Ciobanu (2021), and Saleem and Shabbir (2020). However, the study by Fatima et al. (2020) showed the opposite result. (Human Capital Accumulation) is considered an intervention variable, trade openness may have negative impacts on *GDP* growth in countries with low HCA.

DI variable representing domestic investment has a positive impact on *GDP*, indicating that when *DI* increases by 1 million USD on average, *GDP*

Table 4: Estimated results

<i>lnGDP</i>	<i>Coef.</i>	<i>Std.Err.</i>	<i>z</i>	<i>P> z </i>	<i>95% Conf.</i>	<i>Interval</i>
<i>lnL</i>	.6425	.0014721	436.49	0.0000	.639678	.6454487
<i>DI</i>	-7.41e-06	1.48e-07	-49.91	0.0000	-7.7e-06	-7.12e-06
<i>OPEN</i>	.8007	.0030611	261.59	0.0000	.7947571	.8067564
<i>GDP</i>	4.17e-06	3.26e-08	128.08	0.0000	4.11e-06	4.24e-06
<i>FDI</i>	.0000147	1.13e-07	129.69	0.0000	.0000145	.0000149
<i>_cons</i>	4.862359	.0144671	336.10	0.0000	4.834004	4.890714

Source: Calculated by the author

decreases by 0.0006 percent, which is statistically significant at 5 percent but the sign is not consistent with expectation. This coincides with the study by Emmanuel, Kehinde (2018), Shabbir et al. (2021).

The variable of labor representing the force also has a positive effect on *GDP*, showing that when *L* increases by 1 million people on average, *GDP* increases by 1.89 percent, which is statistically significant at 5 percent and has a sign consistent with expectation. This coincides with the study by Samathan and Haiyun (2017), and Ciobanu (2021).

CONCLUSION

This study examined the impacts of foreign direct investment on the growth of 7 European countries in the first and second quarters of 2021. The results of this study showed that FDI attraction has an important meaning in the GDP growth of European countries, especially in the context of the Covid-19 pandemic having a strong impact on most of the macroeconomic variables. In other words, in the context of economic recession, attracting FDI has become an important solution in ensuring growth. Stemming from that meaning, during the Covid-19 pandemic, European countries have taken efforts to attract FDI inflows in order to seek cash flows from outside, support growth, and recover the economy. Besides, attracting FDI also makes an influential contribution to the stability and development of financial markets, reducing financial risks as well as negative impacts of the Covid-19 pandemic. In addition, increasing trade openness through activities such as participating in the AEC or TPP will help the countries promote their economic growth.

REFERENCES

- Acquah Abraham Mensah, Ibrahim Muazu 2020. Foreign direct investment, economic growth and financial sector development in Africa. *Journal of Sustainable Finance, & Investment*, 10(4): 315-334.
- Baiashvili Tamar, Gattini Luca 2020. *Impact of FDI on Economic Growth: The Role of Country Income Levels and Institutional Strength*. EIB Working Papers
- Basu Parantap, Guariglia Alessandra 2007. Foreign direct investment, inequality, and growth. *Journal of Macroeconomics*, 29(4): 824-839.
- Banday Umer Jeelanie, Murugan Saravanan, Maryam Javeria 2021. Foreign direct investment, trade openness and economic growth in BRICS countries: Evidences from panel data. *Transnational Corporations Review*, 13(2): 211-221.
- Chee Yen Li, Nair Mahendhiran 2010. The impact of FDI and financial sector development on economic growth: Empirical evidence from Asia and Oceania. *International Journal of Economics and Finance*, 2(2): 107-119.
- Ciobanu Alina Mihaela 2021. The impact of FDI on economic growth in case of Romania. *Int J Econ Financ*, 12: 1-81.
- De Mello Luiz R 1999. Foreign direct investment-led growth: Evidence from time series and panel data. *Oxford Economic Papers*, 51(1): 133-151.
- Dinh Trang Thi-Huyen, Vo Duc Hong, The Vo Anh, Nguyen, Thang Cong 2019. Foreign direct investment and economic growth in the short run and long run: Empirical evidence from developing countries. *Journal of Risk, & Management, Financial*, 12(4): 176
- Driffield Nigel, Jones Chris 2013. Impact of FDI, ODA and migrant remittances on economic growth in developing countries: A systems approach. *The European Journal of Development Research*, 25(2): 173-196.
- Emmanuel Oyedokun Godwin, Kehinde Ajose 2018. Domestic investment and economy growth in Nigeria: An empirical investigation. *International Journal of Business, & Science, Social*, 9(2): 130-138.
- Fatima Sumbal, Chen Bateer, Ramzan Muhammad, Abbas Qamar 2020. The nexus between trade openness and GDP growth: Analyzing the role of human capital accumulation. *Sage Open*, 10(4): 2158244020967377.
- Gao Ting 2005. Foreign direct investment and growth under economic integration. *Journal of International Economics*, 67(1): 157-174.
- Hansen H, Rand J 2006. On the causal links between FDI and growth in developing countries. *World Economy*, 29(1): 21-41.
- Hausman Jerry A 1978. Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 46(6): 1251-1271.
- Ibrahim Muazu, Acquah Abraham Mensah 2021. Re-examining the causal relationships among FDI, economic growth and financial sector development in Africa. *International Review of Applied Economics*, 35(1): 45-63.
- ILO 2021. From <<https://www.ilo.org/global/lang-en/index.htm>> (Retrieved on 7 October 2021).
- IMF 2021. Data. From <<https://www.imf.org/en/publications>> (Retrieved on 7 October 2021)
- Jadhav Pravin 2012. Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor. *Procedia-Social, Sciences, Behavioral*, 37: 5-14.
- Khachoo Ab Quyoom, Khan Mohd Imran 2012. Determinants of FDI Inflows to developing Countries: A Panel Data Analysis. *MPRA Paper 37278*, University Library of Munich, Germany.
- Le Bao, Ngo Thi Thanh Thuy, Nguyen Ngoc Tien, Nguyen Duy Thuc 2021. The relationship between foreign direct investment and local economic growth: A case study of Binh Dinh Province, Vietnam. *The Journal of Asian Finance, Economics, & Business*, 8(4): 33-42.
- Lucas Jr Robert E 1998. Transforming Macroeconomics: An interview with Robert E. Lucas Jr. *Journal of Economic Methodology*, 5(1): 115-146.
- Muhammad T, Imran K 2014. Trade openness and economic growth in the Asian region. *Journal of Chinese Economic and Foreign Trade Studies*, 7(3): 136-152.
- Mugableh Mohamed Ibrahim 2015. Time series analysis of inward foreign direct investment function in Malaysia. *Procedia-Social, Sciences, Behavioral*, 172: 679-685.

- Nguyen Hieu Huu 2020. Impact of foreign direct investment and international trade on economic growth: Empirical study in Vietnam. *The Journal of Asian Finance, Economics, & Business*, 7(3): 323-331.
- OECD 2021. From <<https://data.oecd.org/fdi-flows.htm>> (Retrieved on 5 October 2021).
- Rao D Tripathi, Sethi Narayan, Dash Devi Prasad, Bhujabal Padmaja 2020. Foreign aid, FDI and economic growth in South-East Asia and South Asia. *Global Business Review*, 0972150919890957.
- Romer Paul M 1986. Increasing returns and long-run growth. *Journal of Political Economy*: 94(5): 1002-1037.
- Sahoo Pravakar 2006. Foreign direct investment in South Asia: Policy, trends, impact and determinants. *ADB Institute Discussion Paper* No. 56. Faculty of Institute of Economic Growth, Reserve Bank of India Unit, Delhi University. This paper was written when he was Visiting Researcher at ADBI
- Sahu Jagadish Prasad 2021. Does inflow of foreign direct investment stimulate economic growth? Evidence from developing countries. *Transnational Corporations Review*, 13(4): 376-393.
- Saleem Hummera, Shabbir Malik Shahzad 2020. The short-run and long-run dynamics among FDI, trade openness and economic growth: Using a bootstrap ARDL test for co-integration in selected South Asian countries. *South Asian Journal of Business Studies*, 9(2): 279-295.
- Samantha NPG, Haiyun Liu 2017. The impact of FDI on the economic growth of Sri Lanka: An ARDL approach to Co-integration. *International Journal of Innovation and Economic Development*, 3(5): 70-82.
- Shabbir Malik Shahzad, Bashir Misbah, Abbasi Hina Munir, Yahya Ghulam, Abbasi Bilal Ahmed 2021. Effect of domestic and foreign private investment on economic growth of Pakistan. *Transnational Corporations Review*, 13(4): 437-449.
- Solow Robert M 1957. Technical change and the aggregate production function. *The Review of Economics & Statistics*, 39(3): 312-320.
- UNCTAD 1999. World Investment Report 1999. Foreign Direct Investment and the Challenge of Development. From <https://unctad.org/system/files/official-document/wir1999_en.pdf> (Retrieved on 30 September 2021)
- UNCTAD 2021a. FDI/MNE Database. From <<https://unctad.org/fdistatistics>> (Retrieved on 5 October 2021).

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