

The Correlation between Foreign Direct Investment Outflows and Economic Development

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Abstract

This paper highlights the correlation between the foreign direct investment (FDI) outflows, as dependent variable, and the level of economic development given by Gross Domestic Product (GDP) per capita, as independent variable, using the IBM® SPSS® Statistics Version 22 software. The results showed that only 40% of the variation in outward FDI flows is explained by the level of GDP per capita, which demonstrate that the level of economic development measured by GDP/capita does not strongly influence the level of foreign direct investment outflows. Consequently, in our opinion, there are more important factors, some of them exogenously determined as the theories underline, which influence the level of foreign direct investment generated by an economy.

Keywords: *foreign direct investment; outflows; economic development; correlation.*

JEL Classification: *F21; F23; O52*

Introduction

The World Investment Report (UNCTAD, 2018) emphasizes that most of the foreign direct investment (FDI) outflows are generated by the developed economies, while the developing economies account for a much smaller share of the total outward FDI flows. According to the data presented in Table 1, there is a deep gap between developed, developing and transition economies in terms of outward FDI flows. Thus, it seems that the level of foreign direct investment outflows depends of the level of economic development.

In this respect, some theorists (Dunning, 1992; Dunning and Narula, 1996; Buckley and Castro, 1998; Martens and Raza, 2010; Dinh, et al., 2019; Gherghina, Simionescu and Hudea, 2019) underlined that the level of foreign direct investment generated by an economy “changes alongside with its level of economic development”. The FDI outflows have a very low level in less developed countries because “the production factors and capabilities are placed on a low level” and “the ownership advantages of domestic companies are weak”. As compared with developing countries, the companies in developed economies are more competitive, because they have reached “a certain level of productivity” and “posses ownership advantages” that allow them to carry out international investments (Iacovoiu and Panait, 2014; Iacovoiu, 2018; Zefinescu, Voica and Mirela, 2019). The “ownership advantages” of these firms are generally based on their high level of innovation and knowledge that has a significant positive impact on

productivity growth (Iacovoiu, 2009). Consequently, the outward FDI flows generated by developed countries are usually higher than those generated by developing economies generally characterized by a lower level of innovation and productivity.

Table 1. The structure of FDI outflows by level of economic development (2017)

Economy	FDI outflows	
	Millions US\$	%
World	1,429,972.2	100
Developed economies¹	1,009,208.5	70.57
Developing economies²	380,774.8	26.63
Transition economies³	39,988.9	2.80

Source: UNCTAD, World Investment Report 2018, Annex Table 2

Regarding the influence of economic development on the level of FDI outflows, the findings of an empirical study conducted on 135 economies worldwide shown that some developing countries (such as China, India, Brazil, Mexico, and Turkey) and “countries with a limited industrial tradition” (as for example Kuwait and United Arab Emirates) generated FDI outflows higher than some developed economies (UNCTAD, 2006). Thus, according to this study “the ownership advantages could be derived from sources other than those specific to the company” (Iacovoiu and Panait, 2014; Panait and Voica, 2017; Iacovoiu, 2018) which suggests that the outward FDI flows generated by a country are not only dependent on its level of economic development.

Therefore, the level of foreign direct investment flows generated by a country may depend on its level of economic development but also on some “exogenously determined characteristics” (Iacovoiu, 2018) that are not related to it.

Based on the theories and findings presented above, the objective of this paper is to empirically analyse the relationship between economic development and foreign direct investment outflows, in order to highlight the extent to which the level of economic development influences the level of outward FDI flows.

Methodology

The empirical analysis is based on statistical data for 122 countries worldwide concerning Gross Domestic Product per capita (GDP per capita) in current US\$ computed by the World Bank (WB), and outward FDI flows calculated by the United Nations Conference On Trade And Development (UNCTAD) in Millions US\$. The data for the year 2017 is presented in Appendix.

The correlation between GDP per capita as independent variable (X) and outward FDI flows as depending one (Y) was underlined using the IBM® SPSS® Statistics Version 22 software, considering only models that have a value of significance probability (Sig.) lower than 5%.

¹ United States, Canada, European Union member states, Gibraltar, Iceland, Norway, Switzerland, Australia, Bermuda, Israel, Japan, and New Zealand (UNCTAD, 2018).

² Mexico (North America) and most countries in Asia, Oceania, Africa, Latin America and the Caribbean except for those classified as developed economies (UNCTAD, 2018).

³ South-East European countries, other than EU member states, CIS countries, and Georgia (UNCTAD, 2018).

Results

The value of correlation coefficient (R square) ranges between 0.031 in the case of inverse model and 0.408 for logistic model. As presented in Table 2, the values of F and R Square are 79.515 and 0.399, respectively in the case of Compound, Growth, and Exponential models.

Table 2. Values of F and R Square and of the parameters of the regression equation (Dependent Variable: FDI_outflows; Independent variable: GDP_capita)

Equation	Model Summary					Parameter Estimates			
	R Square	F	df1	df2	Sig.	Constant	b1	b2	b3
Linear	.189	28.046	1	120	.000	-1887.172	.893		
Logarithmic	.128	17.541	1	120	.000	-74799.522	9830.468		
Inverse	.031	3.873	1	120	.051	16322.466	-11802672.196		
Quadratic	.196	14.479	2	119	.000	-4209.505	1.268	-5.795E-6	
Cubic	.217	10.898	3	118	.000	1598.329	-.223	4.220E-5	-3.531E-10
Power	.391	77.070	1	120	.000	.000	1.522		
Compound	.399	79.515	1	120	.000	44.384	1.000		
S-curve	.151	21.405	1	120	.000	6.427	-2296.855		
Logistic	.408	82.637	1	120	.000	.023	1.000		
Growth	.399	79.515	1	120	.000	3.793	.000		
Exponential	.399	79.515	1	120	.000	44.384	.000		

Source: Author own calculation based on data in Appendix

The best fitting line corresponds to logistic regression equation (figure 1) as the value of correlation coefficient is 0.408.

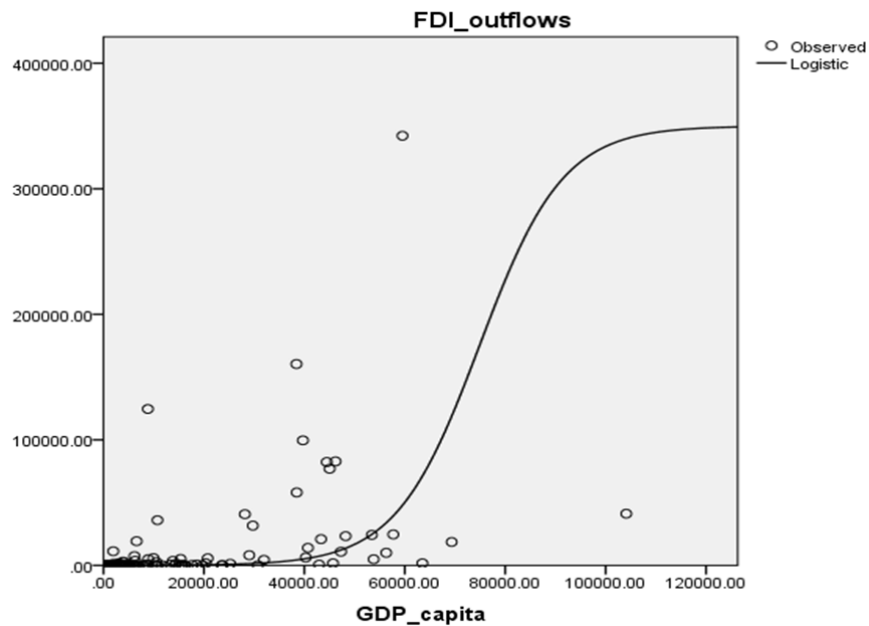


Fig. 1. The Logistic Model

Source: Author own calculation based on data in Table 2

Therefore, according to the analysis presented above only 40% of the variation in foreign direct investment outflows is explained by the level of economic development that emphasize a weak positive relationship between outward FDI flows, as dependant variable (Y), and GDP per capita, as independent one (X).

Discussions

There are significant discrepancies between countries belonging to the same category according to UNCTAD classification in terms of foreign direct investment outflows as follows:

- 1) Over 81% (819,772.3 million US\$) of the FDI flows generated by developed economies comes from six traditionally industrialized countries, namely the United States (342,269 million US\$), Japan (160,449.4 million US\$), the United Kingdom (99,613.6 million US\$), Germany (82,336.5 million US\$), Canada (76,987.9 million US\$), and France (58,115.9 million US\$);
- 2) Around 71% (269,737 million US\$) of the FDI flows generated by developing economies comes from five countries namely China (124,630 million US\$), Hong Kong (82,843.5 million US\$), the Republic of Korea (31,675.8 million US\$), Thailand (19,283.1 million US\$), and India (11,304.4 million US\$);
- 3) Over 90% of the FDI flows generated by transition economies comes from Russia (36,031.8 million US\$).

Also, there are economies with a high level of GDP/capita, ranking in the first half between the 122 analysed countries, which generated foreign direct investment flows much lower than countries less developed according to the level of the GDP per capita (Table.3).

Table 3. Countries with a high level of GDP/capita and a low level of FDI outflows

Countries	GDP/capita		FDI outflows	
	current US\$	Rank	Millions US\$	Rank
Qatar	63,505.80	3	1 694.8	38
Australia	53,799.90	7	4 881.4	30
Finland	45,703.30	12	1 726.8	37
New Zealand	42,940.60	16	581.8	48
Bahamas	30,762.00	23	132.3	68
Bahrain	23,655.00	28	229.0	61
Slovenia	23,597.30	29	106.6	71
Estonia	19,704.70	32	18.6	98
Seychelles	15,504.50	39	5.9	107
Antigua and Barbuda	15,021.70	41	1.5	112
Romania	10,813.70	47	10.1	101

Source: Data presented in Appendix

Therefore, some countries classified by UNCTAD as developed (as for example Australia, Finland, New Zealand, Slovenia, Estonia, and Romania) generated much lower FDI outflows compared with other developed economies that have the same level of GDP/capita.

According to the data presented in Appendix, the value of FDI outflows is higher than 10,000 million US\$ for all analysed countries with GDP per capita over 40,500 current US\$ excepting Qatar, Australia, Finland, and New Zealand. Also, the FDI flows generated by economies with GDP per capita over 19,500 current US\$ is generally above 1,300 million US\$ with the exception of Bahamas, Bahrain, Slovenia, and Estonia. We underscore that Seychelles, Antigua and Barbuda, and Romania have generated insignificant FDI outflows although they have a relatively high level of the GDP/capita namely over 15,000 current US\$, and 10,500 current US\$ respectively.

As compared with these countries, there are other economies with a lower level of GDP/capita but a much higher level of FDI outflows (Table 4). We note the case of China that has a relatively low level of GDP/capita (8,827 current US\$) but is ranked third in terms of foreign direct investment outflows. The level of FDI generated by China (124,630 million US\$) is much higher than that recorded by most of the developed economies. Also, Thailand that has a level of GDP/capita significantly lower as compared to countries presented in Table 2 generated FDI flows much higher than them, over 19,000 million US\$ respectively. Moreover, India that have a low level of GDP/capita (1,939.60 current US\$) has generated FDI flows higher than some

developed economies, such as Denmark (10,030.8 million US\$), Austria (10,892.1 million US\$), Finland (1,726.8 million US\$), Israel (6,275.3 million US\$), and Italy (4,416.5 million US\$).

Table 4. Countries with a lower level of GDP/capita and a higher level of FDI outflows as compared with the countries presented in Table 3

Countries	GDP/capita		FDI outflows	
	current US\$	Rank	Millions US\$	Rank
Russian Federation	10,743.10	48	36 031.8	11
Turkey	10,540.60	50	2 630.0	35
Malaysia	9,944.90	52	5 791.8	26
Mexico	8,902.80	53	5 082.9	29
China	8,827.00	55	124 630.0	3
Thailand	6,593.80	60	19 283.1	17
Colombia	6,301.60	62	3 689.6	32
South Africa	6,160.70	64	7 359.9	24
Azerbaijan	4,131.60	74	2 564.0	36
Indonesia	3,846.90	81	2 911.7	34
Philippines	2,989.00	88	1 614.0	40
Nigeria	1,968.60	97	1 286.2	42
India	1,939.60	98	11 304.4	20

Source: Data presented in Appendix

Conclusion

There is a weak positive relationship between the level of economic development given by GDP per capita, as independent variable, and foreign direct investment outflows, as dependent variable. The findings showed that only 40% of the variation in outward FDI flows is explained by the level of economic development given by GDP per capita. These results are mostly due to the significant discrepancies that exist between developed, developing and transition economies in terms of outward FDI flows as well as between countries belonging to the same category.

Firstly, most of the foreign direct investment flows generated by the developed and developing economies comes from six traditionally industrialized countries (U.S, Japan, U.K., Germany, Canada, and France), and five Asian countries (China, Hong Kong, the Republic of Korea, Thailand, and India) respectively. Also, Russia accounts for over 90% of the FDI flows generated by transition economies.

Secondly, there are economies with a high level of GDP/capita that generated foreign direct investment flows much lower than countries less developed, while other economies, with a lower level of GDP per capita, have generated a much higher level of FDI outflows. In this respect, we note the case of China, Thailand and India that ranked 3rd, 17th, and 20 in terms of outward FDI flows although they have a relatively low level of GDP/capita.

Consequently, we appreciate that the level of economic development measured by GDP/capita does not strongly influence the level of foreign direct investment outflows. In our opinion, there are more important factors, some of them exogenously determined as the theories underline, which influence the level of foreign direct investment generated by an economy.

References

1. Buckley, P.J. and Castro, F.B., 1998. The investment development path: the case of Portugal. *Transnational Corporations*, 7(1), pp.1-15.

2. Dinh, T.T.H., Vo, D.H., Vo, A.T. and 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), pp.1-11.
3. Dunning, J., 2000. The eclectic paradigm as an envelope for economic and business theories of TNC activity. *International Business Review*, 9(2), pp.163-190.
4. Dunning, J., 2006. Towards a new paradigm of development: implications for the determinants of international business. *Transnational Corporations*, 15(1), pp.173-227.
5. Dunning, J.H. and Narula, R. eds., 1996. *Foreign Direct Investment and Governments: Catalysts for Economic Restructuring*. London, U.K.: Routledge.
6. Dunning, J.H., 1992. The competitive advantage of countries and the activities of transnational corporations. *Transnational Corporations*, 1(1), pp.135-168.
7. Gherghina, Ș.C., Simionescu, L.N. and Hudea, O.S., 2019. Exploring Foreign Direct Investment–Economic Growth Nexus—Empirical Evidence from Central and Eastern European Countries. *Sustainability*, 11(19), 5421.
8. Iacovoiu, V. B. and Panait, M., 2014. The Limitation of Investment Development Path Theory. European Union Case. *Economic Insights – Trends and Challenges*, III/LXVI(4), pp.33-40.
9. Iacovoiu, V.B., 2009. *Foreign direct investments between theory and economic practice. Comparative analysis*. Bucharest, Romania: ASE Publishing House.
10. Iacovoiu, V.B., 2018. The Relationship between Economic Development and Foreign Direct Investment Flows. *Economic Insights – Trends and Challenges*, VII/LXX(3), pp.13-20.
11. Martens, P., and Raza, M., 2010. Is globalisation sustainable?. *Sustainability*, 2(1), pp.280-293.
12. Panait, M. and Voica, C., 2017. The relation between foreign direct investments and some economic indicators. The case of Romanian economy. *Theoretical & Applied Economics*, 24(2), pp. 267-280.
13. The World Bank, 2019. *Data*, [online] Available at:
<<http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>> [Accessed on March 10, 2019]
14. UNCTAD, 2006. *World Investment Report. FDI from developing and transition economies: Implication for development*, New York and Geneva: UNCTAD.
15. UNCTAD, 2018. *World Investment Report 2018, Annex Table 2*. [online] Available at:
<<http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx>> [Accessed on March 12, 2019]
16. Zefinescu, C.V., Voica, M.C. and Mirela, P., 2019. Foreign Direct Investment: Motivations, Trends and Challenges. *International Journal of Sustainable Economies Management (IJSEM)*, 8(2), pp.36-48.

APPENDIX

COUNTRIES	GDP/capita (current US\$)	FDI outflows (Millions US\$)
Albania	4,537.90	26.3
Antigua and Barbuda	15,021.70	1.5
Argentina	14,402.00	1 167.7
Armenia	3,936.80	22.3
Australia	53,799.90	4 881.4
Austria	47,290.90	10 892.1
Azerbaijan	4,131.60	2 564.0
Bahamas	30,762.00	132.3
Bahrain	23,655.00	229.0
Bangladesh	1,516.50	169.8
Belarus	5,726.00	33.9
Belgium	43,323.80	20 926.4
Belize	4,905.50	0.3
Benin	829.8	22.7

Appendix (cont.)

Bolivia	3,394.00	79.7
Bosnia and Herzegovina	5,180.60	42.4
Bulgaria	8,031.60	295.8
Burkina Faso	670.7	34.1
Cambodia	1,384.40	259.0
Canada	45,032.10	76 987.9
Chile	15,346.40	5 135.1
China	8,827.00	124 630.0
Colombia	6,301.60	3 689.6
Congo	1,658.00	4.3
Congo, Democratic Republic of the	457.8	292.2
Costa Rica	11,630.70	158.9
Côte d'Ivoire	1,662.40	26.5
Croatia	13,294.50	643.6
Cyprus	25,233.60	1 331.9
Czech Republic	20,368.10	1 623.5
Denmark	56,307.50	10 030.8
Dominican Republic	7,052.30	27.2
Ecuador	6,198.90	286.6
Egypt	2,412.70	199.0
El Salvador	3,889.30	0.2
Estonia	19,704.70	18.6
Finland	45,703.30	1 726.8
France	38,476.70	58 115.9
Gambia	483	7.5
Georgia	4,078.30	268.1
Germany	44,469.90	82 336.5
Ghana	1,641.50	15.9
Greece	18,613.40	672.0
Grenada	10,376.20	0.1
Guatemala	4,471.00	180.1
Guinea	825	0.6
Guinea-Bissau	723.7	1.3
Honduras	2,480.10	173.3
Hong Kong, China	46,193.60	82 843.5
Hungary	14,224.80	322.0
India	1,939.60	11 304.4
Indonesia	3,846.90	2 911.7
Iraq	5,165.70	77.8
Ireland	69,330.70	18 614.0
Israel	40,270.30	6 275.3
Italy	31,953.00	4 416.5

Appendix (cont.)

Jamaica	5,109.60	42.7
Japan	38,428.10	160 449.4
Jordan	4,129.80	6.6
Kazakhstan	8,837.50	787.3
Kenya	1,507.80	107.3
Korea, Republic of	29,742.80	31 675.8
Kuwait	29,040.40	8 112.4
Lao PDR	2,457.40	29.9
Latvia	15,594.30	92.4
Lebanon	8,523.70	567.3
Liberia	456.1	54.2
Luxembourg	104,103.00	41 155.2
Malawi	338.5	5.0
Malaysia	9,944.90	5 791.8
Mali	824.5	54.3
Mauritania	1,136.80	9.7
Mauritius	10,547.20	61.5
Mexico	8,902.80	5 082.9
Moldova, Republic of	2,289.90	8.1
Mongolia	3,735.20	48.6
Montenegro	7,669.60	11.4
Morocco	3,007.20	960.4
Mozambique	415.7	26.0
Netherlands	48,223.20	23 318.4
New Zealand	42,940.60	581.8
Nicaragua	2,221.80	80.4
Niger	378.1	32.7
Nigeria	1,968.60	1 286.2
Oman	15,668.40	396.0
Pakistan	1,547.90	67.0
Peru	6,571.90	262.3
Philippines	2,989.00	1 614.0
Poland	13,811.70	3 590.7
Qatar	63,505.80	1 694.8
Romania	10,813.70	10.1
Russian Federation	10,743.10	36 031.8
Samoa	4,360.80	0.1
Sao Tome and Principe	1,913.00	0.3
Saudi Arabia	20,760.90	5 625.0
Senegal	1,033.10	40.3
Serbia	5,900.00	145.6
Seychelles	15,504.50	5.9

Appendix (cont.)

Singapore	57,714.30	24 681.6
Slovakia	17,605.00	349.5
Slovenia	23,597.30	106.6
Solomon Islands	2,132.10	5.8
South Africa	6,160.70	7 359.9
Spain	28,156.80	40 785.6
Sri Lanka	4,065.20	71.5
Swaziland	3,224.40	3.1
Sweden	53,442.00	24 302.5
Thailand	6,593.80	19 283.1
Togo	617.2	315.6
Tonga	3,944.20	1.5
Trinidad and Tobago	16,145.20	84.2
Tunisia	3,490.80	57.5
Turkey	10,540.60	2 630.0
Uganda	604	0.3
Ukraine	2,639.80	8.0
United Arab Emirates	40,698.80	13 955.5
United Kingdom	39,720.40	99 613.6
United States	59,531.70	342 269.0
Uruguay	16,245.60	107.3
Vanuatu	3,123.60	1.1
Viet Nam	2,343.10	540.0
Zimbabwe	1,079.60	42.2

Source: The World Bank, 2019; UNCTAD, 2018.