

Foreign Direct Investment Role on Poverty Reduction in 33 Provinces in Indonesia

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Abstract. The purpose of this study is to find out the role of foreign investment in poverty rates in all provinces in Indonesia. This research uses quantitative methods by utilizing data released by the Central Bureau of Statistics, Bank Indonesia and the Ministry of Manpower and Transmigration. The analysis uses the least square panel method by conducting a combination analysis of time series data and cross section data by taking samples in 33 provinces in Indonesia. The results of the study proved that when there was an increase in foreign capital growth in 33 provinces in Indonesia, the poverty rate in most of the provinces that are being studied are decreasing. Foreign Direct Investment has positive impact in decreasing the poverty rates in Indonesia. Indonesian government need to facilitate and support the positive foreign investment environment in all provinces in Indonesia.

1. Introduction

Poverty is a situation in which there is an inability to meet basic needs such as food, clothing, shelter, education and health. Poverty can be caused by the scarcity of basic needs, or difficult access to education and employment. Poverty is the loss of welfare [1]. Poverty as a condition in which a person or group of people, male and female, is unable to fulfill their basic rights to maintain and develop a dignified life [2]. The government continues to strive so that the number of poverties throughout the country continues to decrease from year to year.

Foreign Investment or (PMA) is an activity to invest to do business in the territory of the Republic of Indonesia conducted by foreign investors, either using foreign capital fully or in exchange with domestic investors. PMA is a form of investment by building, buying total or acquiring a company. Law No. 25 of 2007 on Investment regulates investment in Indonesia, including for PMA. The Investment Coordinating Board (BKPM) is present as a Non-Ministerial Government Agency tasked with carrying out policy coordination and services in the field of investment based on the provisions of the laws and regulations. The minimum value of foreign investment in Indonesia is Rp 10 billion (excluding land and building prices). The minimum amount of capital paid to banks in Indonesia is Rp 2.5 billion [3].

Investment conducted by overseas investors is expected to accelerate the reduction of a country's poverty rate. Research conducted by Do, Q.A. et.al. (2021) in Vietnam, concluded that foreign investment tends to lower poverty rates in a province [4]. The same results were also concluded by Hanim, W. (2021) which said foreign direct investment had a positive impact on economic growth in Indonesia [5]. In contrast, research conducted by Anetor, F.O., Esho, E., Verhoef, E. (2020) concluded that foreign direct investment and foreign aid had a negative impact on reducing poverty rates in the countries in Africa studied [6]. Because of the differences in findings from

several different researchers related to the influence of Foreign Direct Investment, the author considers it necessary to see the influence of FDI in Indonesia.

The purpose of this study is to test how much impact foreign capital management has on reducing poverty rates in all provinces in Indonesia. Analysis data using regression analysis by using data panel to answer the correlation between Foreign Direct Investment and the reduction of Poverty Rate.

2. Method

This research uses quantitative methods. The data used is secondary data in the form of time series data for 10 years, namely from 2010 to 2019, as well as Cross Section data from 33 provinces on the island of Sumatera. Analysis of data using the Least Square Method Panel. The least square method is using because this method very suitable for combination of time series data and cross sectional data.

3. Results and Discussion Rationale

3.1. Model Analysis

The effect of foreign investment on reducing poverty was analyzed by utilizing data from 33 provinces. The data is a combination of data issued by various relevant Indonesian government agencies.

The analysis model uses the least square dummy variable (LSDV) panel data regression method, with the following interrelationship equations:

$$Y_{it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 D_{1i} + \dots + \alpha_{33} D_{33i} + \mu_{it} \quad \text{..... equation 1}$$

Y_{it} = decrease in poverty

α_0 = constant

α_1 = regression coefficient

D_i = Dummy

X_{1it} = foreign investment.

i = Province; $i = 1, 2, 3, \dots, n$

t = Period of time; $t = 1, 2, 3, \dots, T$

α_{1-33} = slope coefficient dummy

μ_{it} = error term.

3.2. Testing Data

Data that being uses panel data because it is perfect for combining time series and cross section data analysis to solve economic and business problems [7].

Here is foreign investment data and Poverty level data in 33 provinces in Indonesia. Table 1 shown the amount of foreign direct investment in US \$ million dolar at all provinces in Indonesia. Based on the data at Table 1 we know that there are variation number in foreign direct investment every year for provinces.

Table 1. Amount of Foreign Direct Investment

PMA Propinsi di Indonesia											
No	Provinsi	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
		Juta US \$									
1	Aceh	137,5	71,2	23,2	1345	21,2	31,1	94,2	172,3	22,5	4,6
2	Sumatera Utara	379,5	1227,6	1514,9	1014,7	1246,1	550,8	887,5	645,3	753,7	181,1
3	Sumatera Barat	157,1	180,8	194,4	79,3	57,1	112,1	91,4	75	22,9	7,9
4	Riau	1034	1032,9	1061,1	869,1	653,4	1369,5	1304,9	1152,9	212,3	86,6
5	Jambi	54,6	101,9	76,8	61	107,7	51,4	34,3	156,3	19,5	165,7
6	Sumatera Selatan	736,5	1078,6	1182,9	2793,5	645,8	1056,5	485,9	786,4	557,3	37,2
7	Bengkulu	144,8	136,6	138,7	55,7	20,6	19,3	22,3	30,4	43,1	186,3
8	Lampung	155,2	132,3	120,6	85,7	257,7	156,5	46,8	114,3	79,5	22
9	Bangka Belitung	88,7	46,3	153,1	52,7	82,7	105	112,4	99,2	146	25,1
10	Kepulauan Riau	1363,4	831,3	1031,5	519,1	640,4	392,1	315,7	537,1	219,7	30,7
11	DKI Jakarta	4123	4857,7	4595	3398,2	3619,4	4509,4	2591,1	4107,7	4824,1	6429,3
12	Jawa Barat	5881	5573,5	5142,9	5470,9	5738,7	6562	7124,9	4210,7	3839,4	1692
13	Jawa Tengah	2723,2	2372,7	2372,5	1030,8	850,4	463,4	464,3	241,5	175	1544,2
14	DI Yogyakarta	14,6	81,3	36,5	19,6	89,1	64,9	29,6	84,9	2,4	99,1
15	Jawa Timur	866,3	1333,4	1566,7	1941	2593,4	1802,5	3396,3	2298,8	1312	4,9
16	Banten	1868,2	2827,3	3047,5	2912,1	2542	2034,6	3720,2	2716,3	2171,7	1769,2
17	Bali	426	1002,5	886,9	450,6	495,8	427,1	390,9	482	482,1	278,3
18	Nusa Tenggara Barat	270,7	251,6	132,1	439	699,4	551,1	488,2	635,8	465,1	220,5
19	Nusa Tenggara Timur	126,8	100,4	139	58,2	69,9	15,1	9,9	8,7	5,5	3,8
20	Kalimantan Barat	532,3	491,9	568,4	630,7	1335,7	966,1	650	397,5	500,7	170,4
21	Kalimantan Tengah	283,5	678,5	641	408,2	933,6	951	481,6	524,7	543,7	546,6
22	Kalimantan Selatan	372,9	129,2	243,8	249,4	961,2	502,5	260,6	272,3	272,1	202,2
23	Kalimantan Timur	942,7	654,8	1434,2	1300,4	2612,3	2254	1381,3	2014,1	602,4	1092,2
24	Sulawesi Utara	220,5	295,9	482,9	382,8	88	98,4	65,7	46,7	220,2	226,8
25	Sulawesi Tengah	1805	672,4	1545,6	1600,3	1085,2	1494,2	855	806,5	370,4	0,8
26	Sulawesi Selatan	302,6	617,2	712,8	372,5	233,3	280,9	462,8	582,6	89,6	138,5
27	Sulawesi Tenggara	987,7	672,9	693	376,1	145	161,8	86,4	35,7	17	441,8
28	Gorontalo	171,3	40,8	41,3	12,7	6,9	4,1	25,7	35,3	12,5	37,3
29	Sulawesi Barat	10,1	24,7	11,4	20,6	2	16,3	2,5	0,2	5,6	14
30	Maluku	33	8	212	102,6	82,4	13,1	52,8	8,5	11,7	2,9
31	Maluku Utara	1008,5	362,8	228,1	438,9	203,8	98,7	268,5	90,3	129,8	246
32	Papua Barat	46,2	286,9	84,7	514,5	897	153,4	54,2	32	33,1	329,6
33	Papua	941	1132,3	1924,1	1168,4	2586	1260,6	2360	1202,4	1312	17,2

The number of poverty rates for 33 provinces in Indonesia for ten years since year 2010 until 2019 can be shown at Table 2.

Table 2. Poverty Rates in 33 Provinces in Indonesia

Jumlah Penduduk Miskin di Indonesia per Propinsi (x 1000)											
No	Provinsi	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
		Maret									
1	Aceh	819,44	839,49	872,61	848,44	851,58	881,25	840,70	876,56	894,81	861,90
2	Sumatera Utara	1.282,04	1.324,98	1.453,87	1.455,95	1.463,67	1.286,67	1.339,16	1.378,45	1.481,31	1.490,90
3	Sumatera Barat	348,22	357,13	364,51	371,55	379,61	379,20	407,47	397,86	442,09	430,00
4	Riau	490,72	500,44	514,62	515,40	531,39	499,88	469,28	481,31	482,05	500,30
5	Jambi	274,32	281,69	286,55	289,81	300,71	263,80	266,15	270,08	272,67	241,00
6	Sumatera Selatan	1.073,74	1.068,27	1.086,92	1.101,20	1.145,63	1.100,83	1.110,37	1.042,04	1.074,81	1.125,00
7	Bengkulu	302,30	301,81	316,98	328,61	334,07	320,95	327,35	310,47	303,60	324,00
8	Lampung	1.063,66	1.097,05	1.131,73	1.169,60	1.163,49	1.142,91	1.163,06	1.218,99	1.298,71	1.479,00
9	Bangka Belitung	68,38	76,26	74,09	71,76	74,09	71,64	69,22	70,21	72,06	67,00
10	Kepulauan Riau	128,46	131,68	125,37	120,41	122,40	127,80	126,67	131,22	129,56	129,70
11	DKI Jakarta	365,55	373,12	389,69	384,30	398,92	393,98	354,19	366,77	363,42	312,20
12	Jawa Barat	3.399,16	3.615,79	4.168,44	4.224,32	4.433,70	4.327,07	4.297,04	4.421,48	4.648,63	4.773,70
13	Jawa Tengah	3.743,23	3.897,20	4.450,72	4.506,89	4.577,04	4.836,46	4.732,95	4.863,41	5.107,36	5.369,20
14	DI Yogyakarta	448,47	460,10	488,53	494,94	550,22	544,87	550,19	562,11	560,88	758,20
15	Jawa Timur	4.112,25	4.332,59	4.617,01	4.703,30	4.789,12	4.786,79	4.771,26	4.960,54	5.356,21	5.529,30
16	Banten	654,46	661,36	675,04	658,11	702,40	622,83	656,24	648,25	690,49	577,30
17	Bali	163,85	171,76	180,13	178,18	196,72	185,20	162,51	160,95	166,23	174,90
18	Nusa Tenggara Barat	735,96	737,46	793,78	804,45	823,89	820,82	830,84	828,33	894,77	1.009,40
19	Nusa Tenggara Timur	1.146,32	1.142,17	1.150,79	1.149,92	1.159,84	994,67	993,56	1.000,29	1.012,90	1.014,10
20	Kalimantan Barat	378,41	387,08	387,43	381,35	383,70	401,51	369,01	355,70	380,11	428,80
21	Kalimantan Tengah	134,59	136,93	139,16	143,49	147,70	146,33	136,95	141,90	146,91	164,20
22	Kalimantan Selatan	192,48	189,03	193,92	195,70	198,44	182,88	181,74	189,21	194,62	182,00
23	Kalimantan Timur	268,70	269,43	269,64	254,04	252,27	253,60	237,96	246,11	247,90	243,00
24	Sulawesi Utara	191,70	193,31	198,88	202,82	208,54	208,23	184,40	177,54	194,90	206,70
25	Sulawesi Tengah	410,36	420,21	417,87	420,52	421,63	392,65	405,42	409,60	423,63	209,90
26	Sulawesi Selatan	767,80	792,63	813,07	807,03	797,72	864,30	787,67	805,92	832,91	913,00
27	Sulawesi Tenggara	302,58	307,10	331,71	326,87	321,88	342,26	301,71	304,25	330,00	475,00
28	Gorontalo	186,03	198,51	205,37	203,19	206,85	194,17	192,58	187,73	198,27	141,30
29	Sulawesi Barat	151,40	151,78	149,76	152,73	160,48	153,89	154,01	160,55	164,86	400,70
30	Maluku	317,69	320,08	320,51	327,72	328,41	316,11	321,84	338,89	360,32	378,60
31	Maluku Utara	84,60	81,46	76,47	74,67	79,90	82,64	83,44	88,30	97,31	91,10
32	Papua Barat	211,50	214,46	228,38	225,54	225,37	229,43	224,27	223,24	249,84	256,30
33	Papua	926,36	917,63	897,69	89,21	859,15	924,41	1.017,36	976,37	944,79	761,60

3.3. Results of Analysis

The results of the LSDV data panel statistic analysis for each province in Indonesia by modeling that the poverty rate (Y) and Foreign Direct Investment (X) and D1, D2, D33 is the 1st province to the 33rd province.

Based on the results of the panel data analysis as shown in Table 3, it is known that overall Foreign Direct Investment has a positive influence on reducing poverty in Indonesia. This is evident from the Rsquare value of 98.75 percent.

The t-count value of 32 provinces greater than the value of t-table (1.679) or probability of 32 provinces having $\alpha < 0.05$. This means that it can be concluded that Foreign Direct Investment (X1) has a positive role in reducing poverty (Y) in 32 provinces in Indonesia. The only province whose influence is not significant is Bangka Belitung Province (D9) which has a t-count of 1.71. This research is in line with other research conducted by Magombeyi and Odhiambo (2017) which states that Foreign Direct Investment has an impact on decreasing the level of poverty in some countries however. There are also those who do not have a significant impact. Table 3 shown the final results of the data analysis using programing least square method.

Table 3. Results of Data Analysis Using Least Square Panel Method

Dependent Variable: Y
Method: Panel Least Squares
Date: 09/19/21 Time: 13:59
Sample: 2010 2019
Periods included: 10
Cross-sections included: 33
Total panel (balanced) observations: 330

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-7.98E-05	1.62E-05	-4.911350	0.0000
D1	874021.3	45873.61	19.05281	0.0000
D2	1462739.	47759.23	30.62735	0.0000
D3	395568.1	45794.69	8.637860	0.0000
D4	568574.0	47937.16	11.86082	0.0000
D5	281294.7	45786.94	6.143558	0.0000
D6	1167575.	48227.87	24.20956	0.0000
D7	323380.2	45785.46	7.062944	0.0000
D8	1202161.	45806.61	26.24427	0.0000
D9	78502.87	45789.00	1.714448	0.0875
D10	174185.3	46753.91	3.725578	0.0002
D11	713777.0	83594.45	8.538570	0.0000
D12	4639978.	94996.62	48.84362	0.0000
D13	4706101.	49899.73	94.31115	0.0000
D14	545697.2	45773.81	11.92160	0.0000
D15	4932411.	53552.83	92.10366	0.0000
D16	858999.6	61853.51	13.88764	0.0000
D17	216512.3	46576.84	4.648497	0.0000
D18	861113.5	46261.96	18.61386	0.0000
D19	1080743.	45775.44	23.60968	0.0000
D20	435132.5	46877.89	9.282255	0.0000
D21	191633.3	46791.23	4.095495	0.0001
D22	217661.1	46112.30	4.720239	0.0000
D23	361913.7	50744.87	7.132024	0.0000
D24	213681.9	45897.51	4.655632	0.0000
D25	474853.9	48694.76	9.751643	0.0000
D26	848510.2	46180.11	18.37393	0.0000
D27	363201.6	46142.95	7.871227	0.0000
D28	194495.3	45771.45	4.249271	0.0000
D29	180873.0	45767.45	3.952002	0.0001
D30	337222.3	45775.12	7.366934	0.0000
D31	108529.6	46039.07	2.357337	0.0191
D32	248236.3	45937.31	5.403806	0.0000
D33	942406.0	51038.73	18.46453	0.0000
R-squared	0.987539	Mean dependent var	850365.1	
Adjusted R-squared	0.986150	S.D. dependent var	1229768.	
S.E. of regression	144728.3	Akaike info criterion	26.70043	
Sum squared resid	6.20E+12	Schwarz criterion	27.09185	
Log likelihood	-4371.571	Hannan-Quinn criter	26.85656	
Durbin-Watson stat	0.676565			

Another research is carried out by Meyer [8] and also Gorg and Greenaway [9] which states that the positive impact comes from spillover effects as a result of consumer and product surplus due to

various interactions. industry. Other studies conducted by Soumare I [10] and Zaman et.al. [11] also concluded there was a positive link between FDI and reduced poverty rates. However, some researchers say there is no significant link between FDI and reduced poverty [12,13].

So based on the analysis conducted by the author and by comparing with the results of research conducted by other researchers it can be stated that Foreign Direct Investment in Indonesia is needed to accelerate decreased poverty in Indonesia.

4. Conclusion

The increase in foreign investment in 33 provinces in Indonesia shows that Foreign Direct Investment has a significant influence on reducing poverty rates in 32 provinces. there is, while in the province of Bangka Belitung does not have a significant impact on the reduction of poverty. This shows that more research is needed to find out the reasons why there are provinces that even get FDI but do not have an impact on reducing poverty in the country. the province.

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