The relationship between foreign direct investment and poverty reduction in developing countries

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Abstract

The relationship between foreign direct investment and massive poverty in the developing countries are of the important issues that affect the economic development of a country. Assistance may take the form of foreign direct investment in host countries including technology transfer, human resources development, increased competition in domestic markets and ... be done. Also, Kothari focuses on foreign direct economic variables. The results of the panel data with fixed effects for the countries during the period 2014 - 2000 indicate a further reduction in poverty in the developing country context, foreign direct investment is provided.

Keywords: Foreign direct investment, poverty, analysis of panel data.
Introduction

Investment has been considered as one of the major economic issues and it for creation and continuation of economic growth, investment formation in each country, especially in developing countries, is very important. Additionally, foreign direct investment in the host country may have direct and indirect impact on poverty reduction. Indirect impact of foreign direct investment (FDI) on poverty reduction takes place through economic growth leading to better standards of life due to the increase in GDP, the growth of technology and productivity, as well as the economic environment. Considering the relationship between foreign direct investment and poverty, we will find out that the growth of employment and reducing the number of people who live below the poverty line have direct impact on poverty due to improved labor force and an increase in the demand for labor (Nine, 2003).

If a country wants to achieve a better result from the reduction of poverty through FDI, economic and political conditions for such investments must be attractive. FDI provides important and direct helps to reduce poverty caused by unemployment. The impact of FDI on poverty is through its impact on employment. When investors pay wages above the poverty line for those whom they have hired, reducing effect of poverty can increase this investment. In contrast, if they pay wages below the poverty line, reduction effect of poverty will be negligible. In other words, wages below the poverty line lead people into poverty, but they do not help them to save from poverty.

Given the important role of poverty line on foreign direct investment, the question of research is if there is a significant relationship between poverty reduction and foreign direct investment. Therefore, for more accurate and scientific understanding of these issues, this study aims to investigate the relationship between foreign direct investment and poverty reduction in developing countries.

Conducted studies

Domestic studies

Parvin et al (2013) used Social Accounting Matrix to investigate the impact of economic sectors growth on poverty reduction. The results indicate that the reduced poverty in 14 economic sectors is affected by two factors, including changes in average income of socio-economic groups and elasticity of poverty index to changes in the average income of mentioned groups.

Farazmand (1393) conducted a study to examine the relationship between the real exchange rate, foreign direct investment and GDP. Results of the study suggest that the gross domestic product has a significant negative impact on the exchange rate, meaning that a unit increase in gross domestic product increase rate of exchange by 1.27 units.

Abolhasani (2015) investigated the effect of variables such as GDP and investment of provinces and contribution of exports and imports of total GDP of provinces on indicators of extent of poverty and depth of poverty. Results of his study indicated that GDP factors and investment at initial values and increases extent and depth of poverty.

Foreign studies

1. In a paper titled as factors affecting investment in developing economies that include information related to 6 developing countries in (2009-1990), Usman Arshad (2012) concluded
that the exchange rate, tax subsidies, foreign reserves, GDP, and financial policies are effective factors in attracting foreign direct investment and foreign reserves and giving tax subsidies have positive impact on the capital flow.

In a study, Meltem (2014) used panel data to examine foreign direct investment and poverty in developing countries. His research results showed that there was a relationship between poverty and foreign direct investment, and foreign direct investment in developing countries leads to poverty reduction.

Nadia Deutsche (2015) in a study examined the impact of FDI on the business cycle and increased welfare. He concluded that poverty is inversely correlated with investment.

Research hypotheses

Main hypothesis

There is a significant negative correlation between poverty reduction and foreign direct investment.

Secondary hypothesis

1. There is a significant negative relationship between inflation and foreign direct investment.
2. There is a significant positive relationship between growth of GDP and foreign direct investment.
3. There is significant positive relationship between population growth and foreign direct investment.
4. There is a significant negative relationship between interest rate and foreign direct investment.
5. There is a significant positive relationship between growth rate of per capita income and foreign direct investment.
6. There is a significant positive relationship between employment and foreign direct investment.

Research variables and model

The conceptual model of the current study was adapted from (Meltem, 2014) and regression model as follows:

Functional form of the model:

\[ Y = \beta_0 + \beta_1 \text{INF} + \beta_2 \text{GDP} + \beta_3 \text{POP} + \beta_4 \text{IR} + \beta_5 \text{POVERTY} + \beta_6 \text{PCI} + \beta_7 \text{EMP} + \epsilon \]

In which,

Dependent variable:
\( Y \): Foreign direct investment calculated through net inflow of private foreign direct investment in the form of a percentage of GDP

Independent variables:
\( \text{INF} \): inflation rate
GDP: gross domestic product growth rate
POP: population growth rate
IR: Interest rate
PCI: per capita income growth rate
EMP: Employment
Ei: Disruption statements

Methodology
The current study is applied in terms of objective of the study. As this study examines the current situation, it is considered among the descriptive studies. It is also considered a causal study since it estimates panel data regression model.

The data collection method was theoretical and considering the nature of the study, it used library method and the way to access data is library method.

Model analysis and hypotheses
Table 4-7. The model estimation results using fixed effects of dependent variable: Foreign Direct Investment (FDI)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>SD</th>
<th>Statistic T</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>C</td>
<td>5.618975</td>
<td>0.676328</td>
<td>8.308066</td>
</tr>
<tr>
<td>Inflation</td>
<td>INF?</td>
<td>-1.592729</td>
<td>0.764878</td>
<td>-2.082330</td>
</tr>
<tr>
<td>GDP</td>
<td>GDP?</td>
<td>3.045693</td>
<td>0.676564</td>
<td>4.501709</td>
</tr>
<tr>
<td>the population</td>
<td>POP?</td>
<td>3.263277</td>
<td>0.357656</td>
<td>9.124057</td>
</tr>
<tr>
<td>Interest rate</td>
<td>IR?</td>
<td>-1.570989</td>
<td>0.673765</td>
<td>-2.331658</td>
</tr>
<tr>
<td>poverty line</td>
<td>POVERT?</td>
<td>-0.935584</td>
<td>0.444479</td>
<td>-2.104903</td>
</tr>
<tr>
<td>Per capita income growth</td>
<td>PCI?</td>
<td>1.980516</td>
<td>0.666499</td>
<td>2.971521</td>
</tr>
<tr>
<td>Employment</td>
<td>EMP?</td>
<td>1.794928</td>
<td>0.553664</td>
<td>3.241910</td>
</tr>
</tbody>
</table>

Intercept related to variables

<table>
<thead>
<tr>
<th>Intercept</th>
<th>Albania</th>
<th>-2.21E+11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brazil</td>
<td>9.50E+10</td>
</tr>
<tr>
<td></td>
<td>Iran</td>
<td>5.91E+10</td>
</tr>
<tr>
<td></td>
<td>Jordan</td>
<td>-2.16E+11</td>
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<tr>
<td></td>
<td>Turkey</td>
<td>-1.01E+11</td>
</tr>
<tr>
<td></td>
<td>South Africa</td>
<td>-1.36E+11</td>
</tr>
<tr>
<td></td>
<td>Kazakhstan</td>
<td>-2.01E+11</td>
</tr>
<tr>
<td></td>
<td>Iraq</td>
<td>-1.30E+11</td>
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<tr>
<td></td>
<td>Algeria</td>
<td>-1.61E+11</td>
</tr>
<tr>
<td></td>
<td>Azerbaijan</td>
<td>-2.10E+11</td>
</tr>
<tr>
<td></td>
<td>Belarus</td>
<td>-2.02E+11</td>
</tr>
</tbody>
</table>
The results of model estimation using the fixed effects regression method (dependent variable: Foreign Direct Investment) show that determination coefficient of model (R2) is equal to 0.90. It means that 90 percent of the foreign direct investment variable changes are explained by significant variables in the model.

Since the p-value of poverty line coefficient significance test is less than 5%, it can be said that null hypothesis is rejected at significance level of 5%. Therefore, poverty variable coefficient is negative and significant. Its number means that when poverty line in selected countries increases by 1 unit, foreign direct investment reduces by 0.9 unit.
* Therefore, the main hypothesis is accepted.

As indicated in the Table (4-7), since the p-value of inflation significance test was less than 5%, inflation coefficient is positive and significant. This means that when inflation increases by 1 unit, foreign direct investment decreases by 1.5 units.
* Therefore, the first secondary hypothesis is accepted.

As the p-value of GDP significance test was less than 5%, GDP coefficient is significant statistically in the model. Therefore, it can be said that the variable of GDP has positive and significant impact on FDI.
* Therefore, the second secondary hypothesis is accepted.

Since the p-value of significance test of population growth rate (pop) was less than 5%, pop coefficient is positive and significant. This means that when pop increases by 1 unit, foreign direct investment increases by 3.2 units.
* Therefore, the third secondary hypothesis is accepted.

Since the p-value of significance test of interest rate (IR) coefficient was less than 5%, IR variable coefficient is negative and significant. This means that when interest rate increases by 1 unit, foreign direct investment increases by 1.57 units.
* Therefore, the fourth secondary hypothesis is accepted.

Since the p-value of significance test of per capita income growth rate (PCI) was less than 5%, PCI variable coefficient is positive and significant. This means that when PCI increases by 1 unit, foreign direct investment decreases by 1.9 units.
* Therefore, the fifth secondary hypothesis is accepted.

Since the p-value of significance test of employment (EMP) coefficient was less than 5%, EMP variable coefficient is positive and significant. This means that when EMP increases by 1 unit, foreign direct investment decreases by 1.7 units.
* Therefore, the sixth secondary hypothesis is accepted.

**Conclusion**

**Main hypothesis**

Panel data model confirms the significant relationship between these two variables. A significant level less than 0.05 indicates significance of poverty line variable in the above model.
Therefore, reduced poverty line has impact on foreign direct investment first. Second, its negative mark indicates that as poverty line decreases in developing countries, foreign direct investment increases in these countries. Therefore, foreign direct investment share of GDP increases.

**First secondary hypothesis:**
The increase of inflation in an economy has impact on many variables such as employment, economic growth, and other variables. Therefore, as shown in estimate model, inflation increase has negative and reverse effect on foreign direct investment in developing countries.

**Second secondary hypothesis:**
Increase in GDP enhances country's underlying economic growth. One of the requirements for economic growth of each country is trade with the world markets and participation of foreign investors in the economy of that country. Therefore, as estimate model shows, increase in GDP leads to an increase in FDI share of GDP.

**Third secondary hypothesis**
Population of each country is among the factors influencing the development process in that country. Developed population and experts leads to promoted human development in the country. As shown in panel data, population increase will lead to increased foreign direct investment. This shows that foreign investment and technology transfer related to it are provided by population of that country.

**Fourth secondary hypothesis**
Adopting appropriate policies on interest rates can lead to increase in foreign direct investment and even domestic investors. Therefore, estimated model indicates an inverse relationship between interest rates and foreign direct investment.

**Fifth secondary hypothesis**
As shown in the estimated model, increased per capita income leads to increase in foreign direct investment in the developing countries. As per capita income increases by one unit, foreign direct investment increases by 1.98 units. Therefore, the relationship between income per capita and foreign direct investment is confirmed.

**Sixth secondary hypothesis**
Increased employment is result of increased production and economic growth and macroeconomic variables growth. Results of model estimate show positive relationship between these two variables.
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