

Financing Inclusive Growth through FDI: Incorporating the Role of Institutional Quality

Muneza Munir*

Ambreen Fatima†

Abstract *Countries need a tremendous amount of investment to utilize existing resources and enhance productivity in order to ensure inclusive growth in the economy. Foreign Direct Investment (FDI) by providing the required investment can fulfil the saving-investment gap. The paper makes an empirical investigation of the effectiveness of FDI as a financing tool for inclusive growth. The study also examines how the effectiveness of FDI varies across economies with varying level of institutional quality. The results suggest that FDI plays a significant role in achieving inclusive growth, especially in economies with a low and medium level of institutional Quality. A deep underpinning of our inclusive growth variable brought thoughtful insights such as low and middle-income economies, which mostly belong to the low and medium level of institutional quality cluster. They should adopt policies that enhance the existing spectrum of opportunities. Whereas equity should be the top-most priority for high-income economies.*

Key Words: Inclusive Growth, Institutional Quality, Foreign Direct Investment, Equity

JEL Classification: O43, D31, F23, F36, D63

Introduction

Despite the fact that Inclusive growth seems an attractive idea, a huge amount of investments is required to create new opportunities and to utilize the existing capacity of the economy more efficiently. Foreign Direct Investment through financial, technological and knowledge spillovers, can play a vibrant role in filling the gap. It causes structural transformation and mobilizes domestic resources.

A look at the Global trend of FDI shows that its inflow fell by 23 percent in 2017 to \$1.43 trillion from \$1.87 trillion in 2016. FDI inflow remained stable in developing economies while it slowed down for developed and for economies in transition. Among the top ten recipients of FDI, half of them are developing economies such as China, Hong Kong, Brazil, Singapore and India. Most of the FDI flew out from the wealthier nation to the developing economies. Their total outflow was \$380.8 billion while inflow was about \$670.7 billion in 2017. US remained the largest recipient of FDI by receiving 251\$ billion, followed by China and Singapore with FDI inflow of \$140 billion and \$110 billion.

* PhD scholar, Applied Economics Research Centre, University of Karachi, Karachi, Sindh, Pakistan. Email: munezaykhan@hotmail.com

† Associate Professor, Applied Economics Research Centre, University of Karachi, Karachi, Sindh, Pakistan.

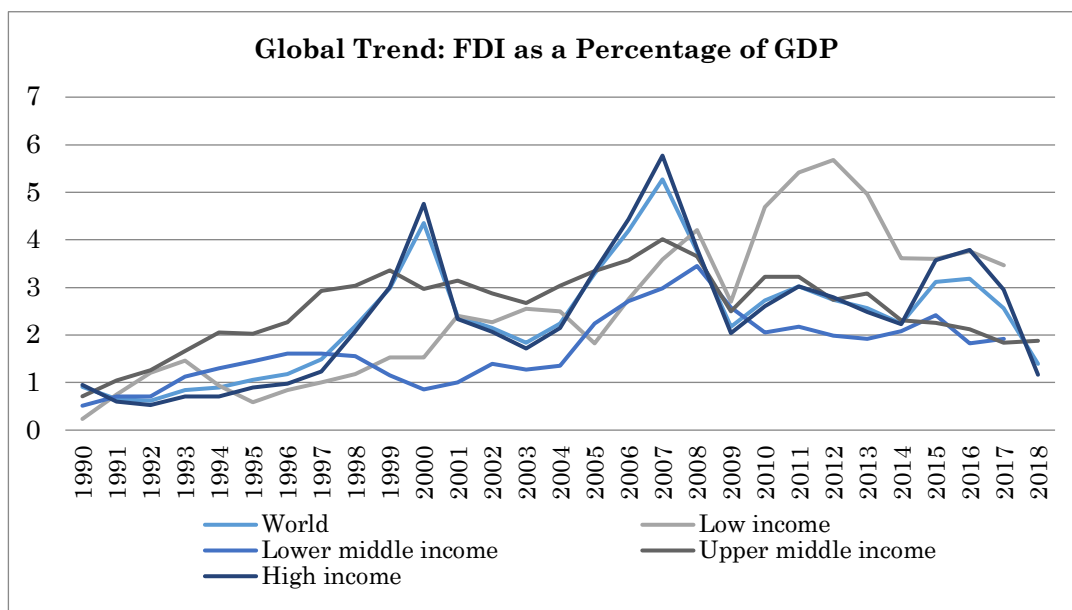


Figure 1: FDI as a Percentage of GDP

FDI is the largest source of external finance, among other sources, possesses the tremendous capability to alter the economic progress of the host economy. FDI in total makes 39% of total incoming finance for developing economies, while its flow is just less than a quarter in the least developed countries (LDC's).

Considering its contribution and long-term implication, it is a narrow approach to lemmatize the role of FDI in promoting economic growth only. It is evident from economic growth episodes of Great Britain and India that economic growth alone does not guarantee the reduction in poverty or inequality. Recently Indonesia has experienced the worst income inequality in the last 50 years while performing remarkably in terms of economic growth during the financial crisis. This shows that economic growth is a very vague indicator for assessing the development of an economy as it alone cannot ensure the benefit of every segment of society. The new developments in growth literature take poverty and inequality also in the account. Hence the paper links FDI with a broader term, Inclusive Growth. Inclusive growth is a growth process that includes every segment of society. It creates and distributes opportunities in an equitable manner and utilizes a major part of the labour force. It also moves them out of poverty and enhances productive employment. The evidence from a long list of literature, consulted for this research suggest that the resulted effect of FDI on inclusive growth is highly defined by the host economy's own institutional quality. The empirical investigations in studying the role of institutional quality on attracting FDI's inflow is extensive. Unfortunately, the existing literature merely focuses on the role of the institution in defining the end effects of FDI.

Keeping the above-mentioned arguments into consideration, this cross-country study aims to meet certain objectives mentioned below:

- 1- To explore the channels through which FDI can affect inclusive growth.

- 2- To assess the contribution of foreign direct investment in promoting growth inclusiveness.
- 3- To explore how variations in the institutional quality change the impact of FDI on inclusive growth.

Literature Review

Foreign Direct Investment in recent years played a very important role in the development of emerging economies. It deals with the two most important issues; lack of capital to initiate any project and lack of expertise to run the project (Marson & Abdullah, 2010). FDI not only affects the economic growth but also has become a source of economic integration. It helped economies in the reduction of poverty and inequality. It directly affects the supply capacity of the public and private sector, generates the employment opportunities and enhances productivity.

FDI can lead to positive spillover effects on the host country by creating employment opportunities, knowledge and technological transfers, and by enhancing competition. In a few studies, it is also termed as “sustainable investment”, which can lead to socio-economic development. [\(Wentworth Schoeman & Langalanga, 2015\)](#) argued that FDI’s spillover effect depends on the absorptive capacity of the host country, governments’ ability and right intervention. Governments can play an important part in engaging and negotiating with the investors to invest in the sectors, which can benefit the economy and citizens in the best way possible. Institutions need to set out rules and regulations that create a transparent, corruption-free business environment. A monitoring and assessment system needs to be worked out, accompanied by a corrective mechanism for non-performance. The study concluded that FDI could be used to achieve inclusive growth under a better institutional environment.

Agreeing with [\(Wentworth Schoeman & Langalanga, 2015\)](#), [\(Busse & Groizardb, 2006\)](#) also found positive welfare effects of FDI under a better regulatory framework and an efficient institutional setting. The same study argues that while an adequate amount of government regulations can lead to a positive effect of FDI, yet and excessive regulations can restrict the growth effect of FDI. Excessive regulations can occur if human and capital resources are prevented from reallocation. It can diminish the ease of doing business and result in restrictive employment laws. In addition to this, multinational firms can reduce forward and backward linkages to the local economy if the government strictly enforces contracts and creditors’ rights to protect investors. In summary, FDI can have a positive or negative effect on the economy’s growth prospects depending on the kind of role institutions’ play. [\(Hayat, 2019\)](#) confirmed the proposition provided the evidence that FDI-led growth was only observable in low-middle income countries. In high-income economies, FDI was found to slow down economic growth even after inducing the role of institutional quality. The paper also found that better quality of institutions can improve FDI led economic growth in low and middle-income economies only. [\(Nunnenkamp, Schweickert and Wiebelt, 2007\)](#) conducted a general equilibrium analysis and analyzed medium to long term impact of FDI inflows on poverty and income distribution in Bolivia. The analysis suggests that FDI inflows contribute to Bolivian economic growth and reduction in poverty. However, the income distribution becomes more unequal more. Specifically, it widened the disparity between urban and rural areas. It leads to more employment and greater factor remuneration in the urban segment while rural segment benefits marginally. Furthermore, they argued

that the growth and poverty-reducing effect of FDI is also dependent on the government’s capability in enhancing the absorptive capacity of high FDI inflows. (Alafro et. Al., 2004) argued that underdeveloped local financial institutions can limit a country’s ability to exploit the potential of FDI spillover. (Tamar, Gattini & Luca, 2020) provided evidence that absorptive capacity matters in channelling FDI effects. Countries with better institutional setups show a positive impact of FDI on economic growth. The study concluded that FDI benefits do not accrue mechanically and evenly across economies; instead, there is an endogenous relation between FDI and growth. This endogenous relation can be explained by the role of institutions. This effect gets larger as we move from low to middle-income economies; however, it diminishes as we move from transition to developed economies.

The above-discussed glimpse of the literature suggests that despite the role of FDI in achieving growth has been acknowledged in a decent amount of literature, yet its role in promoting growth inclusiveness lacks emphasis. Furthermore, to the best of our understanding, the role of institutional quality has not been embedded in empirical researches while studying this FDI, inclusive growth nexus on such an extensive level. The study contributes to the existing set of knowledge by investigating the Link between FDI and inclusive growth. It also assesses the role of institutional quality in order to determine the effectiveness or ineffectiveness of FDI as a driver of inclusive growth.

Methodology and Data Sources

Measuring Inclusive Growth

In literature, inclusive growth is defined as the maximization of the social opportunity function. As it undertakes the spectrum of efficiency and equity under one umbrella. The concept of social opportunity function itself was derived from the idea of generalized concentration curve introduced initially by (Ali & Son, 2007) in inclusive growth literature. This concept of generalized concentration curve was later used to form social opportunity index by calculating the area under the curve ([Anand, Mishra, and Peiris, 2013](#)).

$$Y^* = \int_0^{100} \bar{Y}_i d_i \dots \dots \dots (1)$$

Considering the fact that opportunity can take any forms such as health care, education or several other monetary and non-monetary opportunities. The study will use Income as a determinant of opportunity. As it is the most common and widely used measure of determining individuals’ access to certain other kinds of opportunities.

Following points can be understood by the above equation (1).

1. For a completely equitable society $\bar{Y} = \bar{Y}^*$.
2. If $\bar{Y}^* < \bar{Y}$, it suggests the inequitable distribution of income.
 3. A higher \bar{Y}^* depicts higher level of income.

\bar{Y} Shows the average opportunities available to any society. While, \bar{Y}^* shows average availability of opportunities to individuals belonging to each income quintile. Hence, the deviation between \bar{Y}^* and \bar{Y} shows inequality in distribution of the opportunities (which in our case is interpreted by income). Based on this empirical modelling, (Ali and Son, 2007) proposed Income Equity index (IEI),

$$\omega_i = \frac{\bar{Y}^*}{\bar{Y}}$$

A completely equitable society will be having the (IEI) $\omega_i=1$, Inclusive growth can be achieved by increasing \bar{Y} and by increasing the value of equity index(ω_i). Where,

$$\bar{Y}^* = \omega * \bar{Y} \dots \dots \dots (2)$$

Equation-2 defines that inclusive growth depends on average income and distribution of the income across different segments of society.

$$D\bar{y}^* = \omega_i * d\bar{y} + d\omega_i * \bar{y} \dots \dots \dots (3)$$

$d\bar{y}^*$ is the change in degree of inclusive growth, growth is more inclusive if $d\bar{y}^* > 0$. Equation -3 suggests that we can adopt two kinds of policy measures: i) which increases the average income (growth-oriented policies) ii) which makes the distribution of the resources or opportunities more equitable, several interpretations of inclusive growth can be deduced from the above equation (Klasen, 2010)

- 1- $d\bar{y} > 0$ and $d\omega > 0$ – growth is unambiguously inclusive
- 2- $d\bar{y} < 0$ and $d\omega < 0$ – growth is unambiguously non-inclusive
- 3- $d\bar{y} > 0$ and $d\omega < 0$ - can be inclusive (if the percentage change in average opportunities is greater than the percentage change in ω)
- 4- $d\bar{y} < 0$ and $d\omega < 0$ - can be inclusive if the percentage change in ω is greater than the percentage change in average opportunities.

The above discussed theoretical model provided us with the basis for the calculation of inclusive growth, which works as the key variable for this study. In the present study we have taken Per Capita Gross Domestic Product as the average opportunity available in the society (\bar{Y}), for (\bar{Y}^*) we have taken income share held at different income quintile.

Measuring Institutional Quality Index

In order to construct the institutional quality index, we applied Principal Component Analysis (PCA) on World Governance Indicators by the World Bank (voice and accountability, government effectiveness, control of corruption, regulatory quality, the rule of law and political stability and violence) (Nawaz, Iqbal & Khan, 2014). Each indicator ranges from - 2.5 to + 2.5. It is expected that the variables will be correlated; hence we applied principal component method (PCM). PCM converts each possibly correlated variable into linearly correlated variables called principal component by using orthogonal transformation. Each principal component explains the amount of variation exists within a certain variable under Principal Component Method (PCM). Generally speaking, PCA converts a large number of correlated variables to a smaller number of uncorrelated variables. Another advantage of using PCA is that the weights to be assigned with each indicator are determined by data itself which mitigates the biasness created by any objective weight assigning technique. In our case, most of the variation was explained by the first component; hence its value has been used to compute the index (See Annexure-B).

Regression Framework

As discussed in section two, the study specifically investigates the use of FDI as a tool of financing inclusive growth while incorporating the role of institutional quality. In order to do so, the following model is estimated.

$$Y^*_{i,t} - Y^*_{i,t-1} = \gamma_i + \lambda_t + \alpha_1 \log FDI_{i,t} + \alpha_2 IQI_{i,t} + \alpha_3 X_{i,t} + u_{it} \dots (4)$$

$$GDP_{it} = \gamma_i + \lambda_t + \alpha_1 \log FDI_{i,t} + \alpha_2 IQI_{i,t} + \alpha_3 X_{i,t} + u_{it} \dots (5)$$

$Y^*_{i,t} - Y^*_{i,t-1}$ is inclusive growth already measured and calculated using social opportunity function used by (Ali and Son, 2007). FDI_{it} is the inflow of foreign direct investment as a percentage of GDP. Here, if α_1 is <0 it means Inclusive growth will decrease with the higher level of FDI and conversely, $\alpha_1 > 0$ suggests that higher level of FDI will increase inclusive growth. IQI_{it} is institutional quality index calculated using principal component analysis. X_{it} is the set of control variables which are introduced in order to determine the strength of the relationship in more effective manner. The related reviewed literature helped in choosing the control variables which include; Domestic credit to the private sector as a percentage of GDP proxy for financial deepening, trade openness measured by merchandise trade as a percentage of GDP, the government fixed capital formation as a determinant of fixed investment, government consumption expenditure as a percentage of GDP, Inflation as a proxy for economic stability and dependency ratio. U_i represents a country and time-specific effect where i represents country and t represents time. In regression (3.3.2) we have used gross domestic product (GDP) as our dependent variable. It will help us to compare the extent to which the effectiveness of different policy variables varies for inclusive growth and economic growth.

As discussed in the section, 3.1 inclusive growth depends on i) Average opportunities availability (\bar{Y}) and ii) how the opportunities are distributed measured by equity index (ω). As the next step, the research will disaggregate the inclusive growth variable and analyze the impact of FDI on two components of inclusive growth.

$$\bar{Y}_{it} = \gamma_i + \lambda_t + \alpha_1 \log FDI_{i,t} + \alpha_2 IQI_{i,t} + \alpha_3 X_{i,t} + u_{it} \dots (6)$$

$$\omega_{it} = \gamma_i + \lambda_t + \alpha_1 \log FDI_{i,t} + \alpha_2 IQI_{i,t} + \alpha_3 X_{i,t} + u_{it} \dots (7)$$

This part of the estimation will help us to assess that under different levels of institutional quality which kind of policy as a short term policy tool a country must adopt.

Data Sources

The study uses panel data of 86 world economies, selection of time series and cross-sectional units are majorly interpreted by the availability of data. The data related to income share held at each quintile is scattered and an unbalanced database. In addition, the worldwide governance indicators (WGI) database for construction of the institutional quality index is only available since 1996. The data has been divided into three main clusters according to their ranking and performance in terms of their institutional quality. Economies with an average IQI value of (< 0) were classified as low in institutional quality, an average value of IQI ($> 0 < 1$) were categorized in medium, and an average value of (IQI > 1) were considered as economies with high level of institutional quality.

We introduced inclusive growth as our dependent variable; the data for the said variable was also constructed using social opportunity function (Ali & Son, 2007; Zhuang & Juzhong, 2007; Anand & Misra, 2013) the detailed description and methodology of constructing the inclusive growth variable is mentioned in section 3.1. The data for Per-capita income and income share have been taken from the World Bank. Income share at each 20% has been multiplied by per-capita income and divided by the population share (Anand & Misra, 2013). Our inclusive growth variable is designed in such a way that it gives high weightage to any transfer or creation of opportunities for the lower-income

segment and low weightage if the opportunity is transferred or created for the upper-income segment of the society.

The data for control variables have been collected from different international institutions such as; data for trade openness and FDI have been obtained from world trade organization; Government consumption expenditure data as a percentage of GDP and Government fixed capital formation as a percentage of GDP from the World Bank national accounts data, data for inflation measured by consumer price index and domestic credit to private sector comes from international financial statistics compiled by international monetary fund and data for age dependency ratio from the world bank estimates of United Nations' population division data.

Results and Discussion

The results presented in Table -1 are fixed effect robust estimates, which automatically addresses any underlying existence of heteroscedasticity. Hausman specification test has been used to select between the two widely used panel estimation techniques, fixed and random effect estimation. Result for the overall sample of world economies shows a significant positive effect of FDI on inclusive growth and GDP. The second key variable, institutional quality, has shown a significant effect on overall economic growth and failed to show any significant impact on growth inclusiveness. The categorization of data on the basis of institutional quality will help us to have a deep insight into this negative yet insignificant association. The results show that fixed investment and trade openness both contribute not only in boosting economic growth but also help in making the growth process more inclusive. Financial deepening confirming a few recent researches failed to show any positive impact ([Naceur and Zhang, 2016](#); [Battisti et al. 2018](#); [Brei et al. 2018](#)). The effect of inflation and dependency ratio remained negative.

The main aim of the study is to analyze the role of FDI in financing the inclusive growth process under different levels of institutional quality. In order to do so, we have divided data into three different institutional regimes low, medium and high level of institutional quality based on different levels of an institutional quality index for 86 countries for the period of 1996 to 2015. This categorization of the economies on the basis of varying level of institutional quality will help us to understand the dynamics of the relation between FDI and Inclusive growth in a more elaborate manner.

Low Institutional Quality Cluster

The fixed effect estimates for low institutional quality cluster suggests a positive and significant association between FDI and inclusive growth with a coefficient of (0.029). The results obtained suggest that FDI positively affect the economic growth variable. The positive association comply with the results for inclusive growth too. However, the coefficients for them vary immensely. The coefficient of FDI from the first model is 0.029,, while the coefficient for the second model is 1.550. The difference between the two suggests that there is a huge gap in policies. As FDI's contribution to promoting economic growth is significantly larger than for inclusive growth.

The first cluster contains the economies having an average value of less than zero of the institutional quality index. Here, the negative sign of IQI affirms the fact that an increase in the level of institutional quality alone cannot guarantee the improvement in an overall economic situation unless a threshold level has been achieved (Jude &

Levieuge, 2013). Similar to this, GDP and institutional quality is having a significant negative association. This suggests that persistent and lower level of institutional quality creates an overall lower level of economic achievements.

Control variables government fixed investment and trade openness depicted a positive association with inclusive growth, as they broaden the size of the available opportunities resulting in an expansion of average opportunities availability (Ali & Son, 2007; [Barro & Lee, 2000](#); [Dollar & Kraay, 2003](#); [Anand & Misra, 2013](#)). Interestingly, financial deepening measured by a credit to the private sector as a percentage of GDP seems to have a negative impact on inclusive growth confirming (Ali & Son, 2007; Anand & Misra, 2013) as financial development is linked to higher inequality. (Jaumotte, Lall and [Papageorgiou, 2008](#)) empirically investigated the relationship between financial deepening and inequality. They explored that a one standard deviation increase in financial deepening from its mean level will increase inequality by 2.6 percent. As financial deepening may disproportionately accrue to the upper-income segment having more income or collateral ([Jauch & Watzka, 2012](#)). This negative correlation is also evident in terms of economic growth depicted by GDP growth. There are many empirical pieces of evidence which affirm that there is no significant short term relationship between financial deepening and GDP. Furthermore, inflation and dependency ratio depicts a negative impact on inclusive growth. The results for control variables of our economic growth regression followed the similar signs obtained for inclusive growth regression except for dependency ratio. Coefficients for fixed investment (0.0486) and openness (0.060) showed a positive impact on GDP while coefficients for inflation (-0.104) and dependency ratio with (-0.0049) has shown a negative association with GDP.

Medium Level of Institutional Quality Cluster

The panel regression for unique measure of inclusive growth brought some thoughtful insights for FDI led inclusive growth relation. Foreign direct investment has a positive and significant effect on inclusive growth with a coefficient of (0.0129). Here the interesting point is that the coefficient of FDI for the lower institutional quality cluster was (0.029), which shows that FDI is more helpful in economies with the lower institutional quality cluster. Most of the economies from low level of the institutional quality cluster also belong to low and lower income economies. Hence, any addition in average opportunity availability will tend to increase the inclusive growth more as compared to countries having a higher level of the initial endowment. Due to this, the impact of FDI can be seen for countries with mid-level of institutional quality on inclusive growth is less. Furthermore, the effect of FDI on overall economic growth is much larger in extent as compared to inclusive growth.

Here, institutional quality is seen to play a significant role in the inclusive growth process with a coefficient of (0.058). This shows that an improved level of institutional quality helps economies to distribute the resources in more equitable manner. Similarly, the impact of institutional quality on GDP is positive and significant. Trade openness and fixed investment has shown a significant and positive relation with IG and GDP. The effect of said variables are slightly more pronounced in our second regression.

Cluster with High Level of Institutional Quality

The results for this cluster highlight some interesting insights for our study. Initially

our coefficient for FDI showed a positive yet an insignificant impact on our both inclusive growth and GDP growth variables. Here a notable point is that all the economies in this cluster belong to high income economies category. Hence, this insignificant association might come from the fact that as countries attain a certain level of resources, no more foreign inflow or finances can be helpful in defining their growth inclusiveness. Furthermore, FDI led growth is usually more evident in low and middle income countries whereas, in high income economies FDI tends to slow down the economic growth or have no long term effect ([Hayat, 2019](#)).

Our coefficient for institutional quality index shows a positive and significant impact on inclusive growth. The effect for this cluster is larger as compared to the coefficients obtained for the previous two clusters. This shows that economies with higher level of institutional quality are more likely to design and implement policies of equitable distribution of resources. Here, fixed investment seems to have a negative impact on inclusive growth contrasting the previous results. This signifies that the resulted opportunities by government fixed capital formation are less inclusive in high income economies. Trade openness complying with the previous clusters has shown a positive association, while the effect of financial deepening remained negative for our inclusive growth variable. Results obtained for our economic growth regression suggest that institutional quality plays a vital role in overall economic growth for economies with high level of institutional quality. As good quality institutions strengthen the trust of domestic and foreign investors and bring economic prosperity. Here, fixed investment and trade openness plays more important role in GDP growth as compared to inclusive growth. The above-mentioned results explain the significance of using FDI for a broader perspective which is inclusive growth. This conclusion itself is not sufficient to develop policies for inclusive growth. For the deeper understanding of FDI and inclusive growth relation, we broke down the components of inclusive growth variable and regressed them individually on the similar set of exogenous and control variable.

Table 1: A Comparative Analysis of FDI led Inclusive Growth vs. FDI led Economic Growth

Fixed effect Robust Estimates	Overall		Low Institutional Quality Cluster		Medium Institutional Quality Cluster		High Institutional Quality Cluster	
	Inclusive Growth	GDP	Inclusive Growth	GDP	Inclusive Growth	GDP	Inclusive Growth	GDP
Log FDI	0.0147* (0.00)	0.8648* (0.00)	0.0288* (0.00)	1.4610* (0.00)	0.0129* (0.00)	0.6855 (0.01)*	0.0012 (0.79)	0.2840 (0.32)
Institutional Quality Index	0.0151 (0.29)	1.4991*** (0.08)	-0.0216 (0.35)	-.2617** (0.03)	0.0588* (0.00)	1.2799 (0.01)*	0.0678*** (0.08)	3.0407** (0.03)
Govt. Cons. Exp.	-0.0120* (0.00)	0.0805 (0.46)	-0.0020 (0.51)	0.1774** (0.03)	0.0010 (0.74)	-0.0755 (0.59)	-0.0507* (0.00)	0.2409** (0.04)
Fixed Investment	0.0009* (0.00)	0.0979* (0.00)	0.0009* (0.00)	0.0486* (0.00)	0.0008** (0.02)	0.0740 (0.00)*	-0.0011 (0.23)	0.1424* (0.00)
trade openness	0.0007* (0.00)	0.1169* (0.00)	0.0012*** (0.06)	0.0600* (0.06)	0.0005 (0.13)	0.0303* (0.00)	0.0016*** (0.09)	0.1854* (0.00)
financial deepening	-0.0010* (0.00)	-0.0593* (0.01)	-0.0016** (0.00)	-0.0775* (0.00)	-0.0008 (0.00)	-0.0520* (0.00)	-0.0002 (0.32)	-0.0406*** (0.06)
Inflation	-0.000633 (0.23)	-0.0750*** (0.07)	-0.0012 (0.11)	-0.1036* (0.00)	0.0024 (0.17)	0.0270 (0.74)	-0.0074 (0.31)	-0.0129 (0.93)
Dependency Ratio	-0.0003 (0.69)	0.030 (0.64)	0.0009 (0.55)	-0.0049 (0.93)	-0.0044* (0.01)	-0.0595 (0.30)	0.0049** (0.02)	0.0073 (0.94)
Constant	0.2089* (0.00)	-1.3662 (0.85)	0.0472 (0.71)	5.7017 (0.32)	0.0044 (0.95)	2.8499 (0.52)	0.4199*** (0.07)	-12.2895 (0.26)
R-Squared Within	0.1959	0.2315	0.2134	0.27	0.3344	0.3596	0.6559	0.3728
R-Squared overall	0.0744	0.1589	0.0217	0.1506	0.0652	0.2206	0.1087	0.1722
No. of observation	682	750	331	366	208	227	142	156
No. of groups	81	84	43	46	22	22	16	16
F-test	F(80, 593) = 3.61	F(83, 658) = 2.55	F(42, 280) = 5.40	F(45, 312) = 3.00	F(21, 178) = 2.57	F(21, 197) = 2.48	F(15, 118) = 12.61	F(15, 132) = 1.13

*Here *, ** and *** shows significance at 1%, 5% and 10% level

Disaggregating the Results by Equity Index and Average Income

As discussed earlier our inclusive growth variable is based on Utilitarian Welfare Function. In Table-2 we broke down the components of inclusive growth variable into: 1) Growth in Equity Index 2) Growth in average availability of opportunity. Here regression estimates presented in column one for the overall set of economies is suggesting a significant negative impact of FDI on Equity index while the effect on average income is significantly positive. The net effect of FDI on inclusive growth depends on the magnitude of this opposing effect. This result affirms the proposition that if the opportunities resulted by FDI are not accessible to lower segment of society, it will make the endowments of resources more inequitable. ([Ngwakwe and Dzomonda, 2018](#)) found that in case of South Africa increase level of FDI has broadened the income inequality. Results obtained from regressing the similar set of variables across different institutional cluster show that in none of the clusters FDI could create any positive impact on equity while this negative effect was only significant in countries with low level of institutional quality. Furthermore, in addition to equity variable we also examined the impact of FDI on growth in average income which remained positive and significant for our first two clusters of economies with low and medium level of institutional quality respectively. In conclusion, the impact of FDI remained positive and significant in increasing the opportunities but its impact on equity remained negative across the clusters.

Institutional quality being another key variable has shown a significant positive effect on growth in equity index and average income growth (see column 1 and 2, Table-2). The evidence suggests that a better quality institution not only helps to promote economic growth but also effectively deals with the underlying distributional inequity. The regression coefficient of the said variable for cluster-1 has not shown any significant effect on either of the dependent variables. The similar argument which we presented while discussing the regression results of table-1 supports this insignificance of role of institutional quality in low income economies. The argument is that a certain threshold level of institutional quality is required in order to see its effect on any economic indicator. For the second cluster institutional quality index has shown a positive and significant impact on equity index with a coefficient of 0.0257, while its impact on average growth of the income shown a negative association -0.1011. The impact of institutional quality switched the signs for higher institutional quality cluster. It shows that higher level of institutional quality worsened the income distribution by showing a negative coefficient of -0.0432 for equity index. Literature suggests that in high income economies the designed policies are more favorable for people belonging to elite class. In few economies dominant economic elite has enough political power to control key-markets, they can design the property rights in such a way that reflects the unequal balance of political power ([Acemoglu, 2008](#)). This argument if held true then income inequality is explained by the interplay of political and economic institutions. ([Easaw and Savoia, 2009](#)) concluded that institutional arrangement recently has worked according to the interests of dominant groups. Contradicting the results obtained for the previous cluster, in last cluster institutional quality index has shown a positive and significant impact on growth in average income with a coefficient of 0.9295.

Table 1: A Comparative Analysis of FDI led Inclusive Growth vs. FDI led Economic Growth

Fixed Effect Estimates	Overall		Low Institutional Quality Cluster		Medium Institutional Quality Cluster		High Institutional Quality Cluster	
	Change in Equity Index (1)	Growth in average Income (2)	Change in Equity Index (3)	Growth in average Income (4)	Change in Equity Index (5)	Growth in average Income (6)	Change in Equity Index (7)	Growth in average Income (8)
Log FDI	-0.00157*** (0.06)	0.01299*** (0.07)	-0.0058*** (0.08)	0.0612* (0.00)	-0.0007 (0.45)	0.0123** (0.03)	-0.0001 (0.92)	0.0152 (0.16)
Institutional Quality Index	0.01267* (0.00)	0.10295 (0.29)	-0.0073 (0.77)	-0.0924 (0.36)	0.0257** (0.02)	-0.1011** (0.03)	-0.0432* (0.05)	0.9295* (0.00)
Govt, Consump. Exp	0.00029 (0.64)	-0.00392 (0.46)	0.0019** (0.03)	0.0223* (0.00)	-0.0007 (0.38)	-0.0040 (0.55)	-0.0005 (0.20)	-0.0037 (0.71)
Fixed Investment	-0.00007 (0.25)	0.00011 (0.84)	0.0001 (0.25)	0.0013** (0.05)	0.0000 (0.61)	0.0006 (0.23)	-0.0001 (0.35)	0.0022* (0.01)
Inflation	-0.00011 (0.12)	0.00179* (0.00)	-0.0001 (0.43)	-0.0033* (0.00)	0.0016* (0.00)	0.0111* (0.01)	-0.0015* (0.00)	-0.0001 (0.99)
financial deepening	-0.00008*** (0.07)	-0.00087* (0.02)	0.0001 (0.71)	-0.0057 (0.92)	-0.0001*** (0.08)	-0.0024* (0.00)	0.000005 (0.91)	-0.0017** (0.05)
Dependency Ratio	0.00011 (0.42)	-0.00006 (0.95)	-0.0023* (0.00)	0.0004 (0.89)	-0.0015*** (0.08)	-0.0188* (0.00)	-0.0086* (0.01)	-0.0189* (0.00)
trade openness	-0.00394* (0.00)	-0.00131 (0.62)	-0.0004 (0.09)	0.0073* (0.00)	0.0002* (0.00)	0.0001 (0.90)	0.0002* (0.07)	0.0020 (0.11)
Constant	-0.97451 (0.62)	0.11234** (0.03)	-1.0243* (0.00)	-0.4795** (0.07)	-1.0892* (0.00)	1.5252* (0.00)	-0.9826* (0.00)	-0.2877 (0.39)
R-Squared Within	0.3284	0.3154	0.2326	0.4607	0.2237	0.3305	0.1211	0.2642
R Squared overall	0.4246	0.6414	0.0031	0.1196	0.2053	0.1291	0.009	0.0606
F-test	F(56, 474) =157.65	F(56, 474) =2.80	F(45, 310) = 941.53	F(45,311) =25.16	F(21, 197) =152.88	F(21, 197) = 50.66	F(15,132) = 123.48	F(15, 133) =76.55

*here growth in equity index is (dω) and growth in average income (dy).

After explaining the main variables, now we are going to discuss the results for our control variables. Coefficient signs for control variable varied vastly across clusters. In first cluster only government consumption expenditure contributed positively while trade openness and dependency ratio held a significant negative effect on growth in equity index. For $d\bar{y}$, fixed investment, trade openness and government consumption expenditure with a coefficient of 0.0013, 0.0073 and 0.0223 has shown a significant positive impact. In second cluster, trade openness positively contributed in improving equity index of opportunities while all other key explanatory variables failed to have any positive effect. Financial deepening and dependency ratio both contributed negatively. Financial deepening could only make any positive contribution to equity growth in our cluster with high level of institutional quality. Literature indicates that without proper institutional support financial deepening will enhance the existing inequality in the economy. The study concludes that, majority of our key variables that we hypothesized to have a positive effect on inclusive growth were only effective in second and third clusters. Which affirms our earlier proposition that in order to make any economic policy effective a certain level of institutional support is eminent.

Conclusion

The purpose of the study was to investigate the proposition that, Foreign Direct Investment can be used as a financing tool for growth inclusiveness. The validity of its effectiveness across different levels of institutional quality has also been tested. In order to meet the objectives, the study calculated and used the inclusive growth variable following the methodology of Social welfare function also known as the social opportunity function (Ali and Sons, 2007; Anand and Misra, 2013). For determining the varying levels of institutional quality we developed an Institutional Quality Index (IQI) using world governance indicators. First, the study segregated the economies on the basis of their average scores on institutional quality index. Later the segregated clusters were labeled as low, medium and high level of institutional quality. In order to compare the results across different clusters the study reached to following conclusions.

1. Foreign Direct Investment can be used as a financing tool for inclusive growth as it expands the existing spectrum of the available opportunities. A deep underpinning of its impact on inclusive growth variable suggested that the impact of FDI on increasing the overall income is positive and significant. Yet it does not significantly influence the distribution of the opportunities. Hence FDI does not influence inclusive growth through equity channel but by increasing the average opportunities.
1. FDI can be used as an effective tool of financing inclusive growth for countries belonging to low and medium levels of institutional quality cluster. This conclusion affirms the proposition that as a country successfully attains a certain level of average opportunities then its inclusive growth is mostly defined by its performance on equity grounds. As in annexure -A, we can see that high institutional quality cluster consists of all High income economies.
2. A higher level of institutional quality alone cannot guarantee the effectiveness of FDI as a policy tool if it would not take the needs and necessities of the marginalized segments into account. The observation agrees with [\(Acemoglu and Robinson, 2007\)](#) that economic institutions are endogenous. Considering the fact

that different economic institutions produce different kinds of economic distribution, which affect the likelihood of conflicts of interest.

3. Annexure-A clearly defines that majority of the low and lower middle income countries belonged to cluster with low level of institutional quality. Such countries lack resources to create or enhance the average opportunities availability. Hence, any policy that will expand the available opportunities in such countries will contribute more to inclusive growth.
4. For the second and third clusters; political, economic and institutional policies need to take the equity side of the opportunities more into account in order to make the policy work for inclusive growth.
5. Institutional quality is not only a determinant of FDI but it also alters the effectiveness of FDI in defining the inclusiveness process.

As far as the policy implications are concerned the empirical assessments suggest that FDI can play an eminent role in order to finance the inclusive growth process. The effectiveness of FDI to achieve inclusive growth does vary across countries and depends heavily on existing level of institutional quality. Since, change in institutional quality itself is a long term phenomenon. Hence two major policy implications can be drawn with existing set of institutional environment. First, low and middle income economies need to give more importance to policies that expand their average opportunities. Secondly, high income economies need to reconsider their existing pattern of opportunities distribution. Such economies should focus more on equity aspect of FDI. They need to interlink their small firms with FDI, by doing so they can utilize their unskilled and less educated segment of labour force. This can lead to a short term policy solution to ongoing economic problems. For long run policies, policy makers are suggested to design policies in such a way that this equity- growth trade off can be minimized.

The study makes a major contribution in the existing set of literature of this newly developed concept of inclusive growth. The study despite bringing a new concept of identifying tools to finance inclusive growth certainly has few gaps which can be explored in future studies. An assessment of how FDI across different sectors influences the growth inclusiveness can become a major contribution. Additionally, FDI can be distinguished by asset seeking and asset exploiting types; this distinction can create different results on FDI's underlying impact on growth inclusiveness. The study did not incorporate this distinction. Furthermore, the study limited itself only to one aspect of opportunity. While a further underpinning of inclusive growth variable across different sets of opportunities such as employment, health and education can be a marked addition into the inclusive growth literature.

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Annexure-A: List of Countries within Each Cluster

Low Institutional Quality Cluster				Medium Level of Institutional Quality		High Level of Institutional Quality Cluster	
Argentina	HI	Vietnam	LMI	Belgium	HI	Austria	HI
Australia	HI	Zambia	LMI	Cyprus	HI	Canada	HI
Croatia	HI	Albania	UMI	Czech Republic	HI	Chile	HI
Burkina Faso	LI	Armenia	UMI	France	HI	Denmark	HI
Ethiopia	LI	Azerbaijan	UMI	Greece	HI	Estonia	HI
Guinea	LI	Belarus	UMI	Hungary	HI	Finland	HI
Madagascar	LI	Botswana	UMI	Israel	HI	Germany	HI
Niger	LI	Brazil	UMI	Italy	HI	Iceland	HI
Senegal	LI	Colombia	UMI	Latvia	HI	Ireland	HI
Uganda	LI	Dominican Republic	UMI	Lithuania	HI	Luxembourg	HI
Bangladesh	LMI	Ecuador	UMI	Malta	HI	Netherlands	HI
Bolivia	LMI	Iran, Islamic Rep.	UMI	Poland	HI	Norway	HI
Côte d'Ivoire	LMI	Jamaica	UMI	Portugal	HI	Sweden	HI
Egypt, Arab Rep.	LMI	Jordan	UMI	Slovak Republic	HI	Switzerland	HI
El Salvador	LMI	Kazakhstan	UMI	Slovenia	HI	United Kingdom	HI
Honduras	LMI	Mexico	UMI	Uruguay	HI	United States	HI
Moldova	LMI	Paraguay	UMI	Bulgaria	UMI		
Mongolia	LMI	Peru	UMI	Costa Rica	UMI		
Nicaragua	LMI	Romania	UMI	Malaysia	UMI		
Pakistan	LMI	Russian Federation	UMI	Panama	UMI		
Philippines	LMI	Serbia	UMI	South Africa	UMI		
Sri Lanka	LMI	Thailand	UMI	Spain	UMI		
Tunisia	LMI	Turkey	UMI				
Ukraine	LMI	Venezuela, RB	UMI				

Note: Here LI stands for Low income countries, HI for high income countries, LMI for lower middle income countries and UMI for upper middle income countries following the World Bank's country classification based on GNI per capita.

Annexure-B: Principal Component Analysis for Institutional Quality Index Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
Control of Corruption(cc)	1463	0.23344	1.04892	-1.5	2.47
Government effectiveness (ge)	1463	0.3384	0.95312	-1.32	2.35
Political stability and violence (psv)	1463	0.07577	0.9032	-2.81	1.76
Rule of law (rl)	1463	0.24493	1.0028	-2.03	2.1
Regulatory Quality (rq)	1463	0.37895	0.89285	-1.88	2.1
Voice and accountability (va)	1463	0.31743	0.89603	-1.77	1.8

Correlation Coefficient Matix

	CC	GE	PSV	RL	RQ	VA
Control of Corruption (CC)	1					
Government effectiveness (GE)	0.9509	1				
Political stability and violence (PSV)	0.7468	0.7284	1			
The rule of law (RL)	0.9616	0.9618	0.7675	1		
Regulatory Quality (RQ)	0.8996	0.9347	0.7281	0.9391	1	
Voice and accountability (VA)	0.8606	0.8555	0.7518	0.8756	0.8881	1

Principal Component Analysis

Principal Components/Correlation						
Eigenvalue	5.29746	0.364487	0.177206	0.092425	0.039194	0.02923
Proportion	0.8829	0.0607	0.0295	0.0154	0.0065	0.0049
Cumulative	0.8829	0.9437	0.9732	0.9886	0.9951	1
Principal Components (Eigenvectors)						
CC	0.419	0.1793	-0.3156	-0.553	-0.3436	0.5186
GE	0.4201	0.2567	-0.2836	0.0629	0.8204	0.0099
PSV	0.3612	0.9123	-0.1625	0.0873	0.0371	0.0423
RL	0.4255	-0.5148	-0.2262	-0.0376	-0.3321	-0.7951
RQ	0.4166	-0.2128	0.1543	0.7621	-0.2887	0.3051
VA	0.4035	0.0197	0.8477	-0.3168	0.1176	-0.0632