Exploring the Nexus Between Inclusive Growth and Institutional Quality

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ABSTRACT

This study conducts an empirical investigation to identify the relationship between institutional quality and inclusive growth. It examines the existing situation of inclusive growth and institutional quality in 86 countries. It further constructs indices of inclusive growth using social welfare function and institutional quality by applying the principal component methodology to worldwide governance indicators. The fixed effect results suggest that Institutional quality is a significant driver for achieving growth inclusiveness. A deep underpinning of the institutional variable indicates that inclusive growth is positively affected by economic and political institution quality. In contrast, the effect of legal institutions was found insignificant. Furthermore, a cross-country evaluation of inclusive growth presented a few thoughtful insights, such as; in low-income and lower-income economies, inclusive growth can be achieved by increasing the overall opportunities. Whereas middle and high-income economies need to enhance the equity prospects of opportunities to attain growth inclusiveness. By highlighting the role of institutional quality, this study contributes to the existing literature on growth inclusiveness. It suggests that improved quality of institutions, the rule of law, reduced corruption, regulatory quality, securing property rights, and effective governance can extend the opportunities to the unprivileged segment of the society, ensuring long-term growth.

INTRODUCTION

The world has recently observed significant improvement in the living standard, accompanied by an increasing level of inequality, especially in emerging economies. Whereas few developed economies are also watching the episodes of rising inequality. It is a fact that economic growth is not meeting the ends of people belonging to lower-income segments of society. If we look at the elephant curve Figure A. 1, the distribution of benefits produced due to economic growth is quite discriminatory. Across the globe bottom, 50% of the population enjoys only 12 percent of the total growth, whereas; the top captures more than $1/4^{th}$ of the total growth benefits. Despite enjoying higher growth rates, few of the world's biggest economies sit at the bottom on the map of equitable distribution of opportunities (Alvaredo et al., 2018; Dollar & Kraay, 2003; Eldomiaty et al., 2015).

In the last few decades, economic growth worldwide remained exemplary, yet the inequality trend kept showing an upward movement, raising many questions recently.In their research paper, Ali and Son (2007) tried to answer this question through the concept of inclusive growth.Inclusive growth utilizes the unemployed segment of the labour force by providing employment opportunities; it helps them move out of extreme poverty and improve productive employment (Ianchovichina & Lundström, 2009). Every part of society can benefit from the resulting economic growth. Hence, inclusiveness, a multidimensional concept, concentrates on raising living standards and improved well-being and questions whether this material well-being is evenly shared among different social groups.

Considering its long-term implication, inclusive growth has gasped so much attention since its emergence, and several policies have been designed and implemented. Among those policies, most of them have been used in the past. The policies include; attracting foreign direct investment, fiscal expansion, small-scale investments, infrastructural improvements, and ICT and technological advancement (Aoyagi & Ganelli, 2015). Yet the results remained contradictory as these policies remained effective for promoting growth only in a few countries. At the same time, similar policies helped a few economies to achieve the twin objective of fulfilling growth with a reduced level of inequality (Doumbia, 2019). A reliable explanation for such variation was presented by other authors in previous studies (Acemoglu et al., 2001; Acemoglu & Robinson, 2010, 2008). The central argument of their research was the differences in prosperity across countries are due to differences in institutions. They argued that differences in outcomes of any policy are due to variations in choices of economic and political institutions. Similarly, according to Ali and Son (2007), the core requirement to achieve inclusive growth is introducing institutional and governance reform

to restructure policies, address market failures, and ensure a growth process. Everyone can play a role and avail themselves of the opportunities.

Due to its significance, a decent amount of research work in the area of inclusive growth has already been done (Adedeji et al., 2013; Ali & Zhuang, 2007; Anand et al., 2013; Ianchovichina & Gable, 2012), yet the research remained limited to its measurement, identification of determinants, and policies mainly. Furthermore, the relationship between institutional quality and inclusive growth remained limited to theoretical research. Hence, this study contributes to the existing set of knowledge by conducting an empirical investigation of the association between inclusive growth and institutional quality.

LITERATURE REVIEW

The idea of institutional role came into highlight after World War I when the importance of institutions, policy-making, and governments' role in the economy emerged. Veblen the founder of institutionalism in his famous "Veblenian dichotomy," highlighted the role of institutions in different economic activities and negated the role of invisible hands in Large — Scale manufacturing, corporate finance, and salesmanship (Hodgson, 2012). The revival of new classical economics by introducing the role of the institution in the economy created the base of New Institutional Economics (NIE). Later, the pioneer of new institutional economics (Lindert et al., 1985; North, 1991; North & Thomas, 1973) argued that economic growth and institutions complement each other, but the literature remained limited to growth implications of institutional quality till 1997.

At the start of the 21st century, the role of institutions started being investigated for economic growth, poverty, inequality, provision of public service, and economic development (Acemoglu & Robinson, 2008; Alexiou et al., 2014; Bluhm & Szirmai, 2011; Chong & Gradstein, 2007; Sonin, 2003; Zhuang & Ali, 2010). Similarly, Josifidis et al. (2017), while analyzing the distributional inequality of income in advanced economies, concluded that variation in institutional quality creates differences in the interests of the people holding the higher positions in an economy which deteriorates income distribution.

Ali and Son (2007) first highlighted the role of institutions in achieving inclusive growth. While defining the key measures to promote growth inclusiveness in their study, they suggested that institutions play a prerequisite role in making any policy effective. They further argued that the roles of institutions and governance need to be embedded to obtain inclusive growth outcomes. Inclusive growth requires the participation of all individuals belonging to any income class, even the most marginalized segment of the society, not only in

the growth process but also in the decision-making process. That inclusion of institutions will enable the designed policies to be favourable towards the unprivileged segment and achieve higher growth objectives. Considering the importance of institutional quality for achieving inclusive growth, the study conducts a cross-country investigation using the fixed-effect method. The study initially constructs and calculates an index for inclusive growth and institutional quality to fulfill the objectives.

The construction of an inclusive growth index requires integrating the concept of growth and equity in a suitable measure. The most commonly used approach by the research over the past few years has been the opportunity/equity index based on the utilitarian social opportunity function. This function depends on the availability of opportunities and distribution of those opportunities, growth is determined to be inclusive if it increases the overall opportunity function. Additionally, this function gives higher weight to the opportunities available to poor people; another attribute of this type of analysis is that it enables us to examine the change in the distribution of opportunities over time (Adedeji et al., 2013; Ali & Son, 2007; Anand et al., 2013). Institutional quality is a broad concept that integrates several aspects such as the government's efficiency in planning and implementing, freedom of expression and doing business, accountability, corruption control, and regulatory quality. To capture all these social, political, economic, and legal aspects, the most commonly used data in the recent literature on institutions are found to be based on worldwide governance indicators (WGI), introduced by Kraay et al. (1999).

The WGI data constitutes six broad dimensions namely; voice and accountability, government effectiveness, control of corruption, regulatory quality, rule of law, and political stability and violence. Right after its introduction, it became the most widely used data as a proxy for institutional quality (Eldomiaty et al., 2015; Iheonu et al., 2017; Nawaz et al., 2014; Tran et al., 2017; Zhuang & Ali, 2010). There are several reasons to use this data set such as; the data covering political and non-political aspects of institutions, it includes the perception of a wide range of stakeholders [1], and its empirical usability. Based on this extensive significance we will also use the WGI dataset in order to develop the institutional quality index.

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[1] It summarizes and presents the data collected from NGOs, governments, views and perception of public & investors & experts from public & private sectors as it constitutes on four different types of data; surveys of households and firms, commercial business investment providers, non-governmental organizations and public sector organizations

METHODOLOGY

Measuring Inclusive Growth

To study the dual objective of efficiency and equity under one umbrella, the idea of generalized concentration curve is most commonly used, introduced initially by Ali and Son (2007). According to this, the population is arranged in ascending order in accordance with the opportunity they attain. Let $\bar{Y}_i$ be the average opportunity available to bottom i^{th} percentile where i ranges from 0 to 100 and $\bar{Y}$ is the mean of that opportunity. Figure 1 depicts the same level of average opportunities $\bar{Y}$ with a different pattern of distribution $\bar{Y}_i$, here we can see that a higher level of social mobility and inclusive growth is dependent on (i) if the curve moves up at all points (growth), (ii) if the distribution of the opportunity changes (equity)[2].

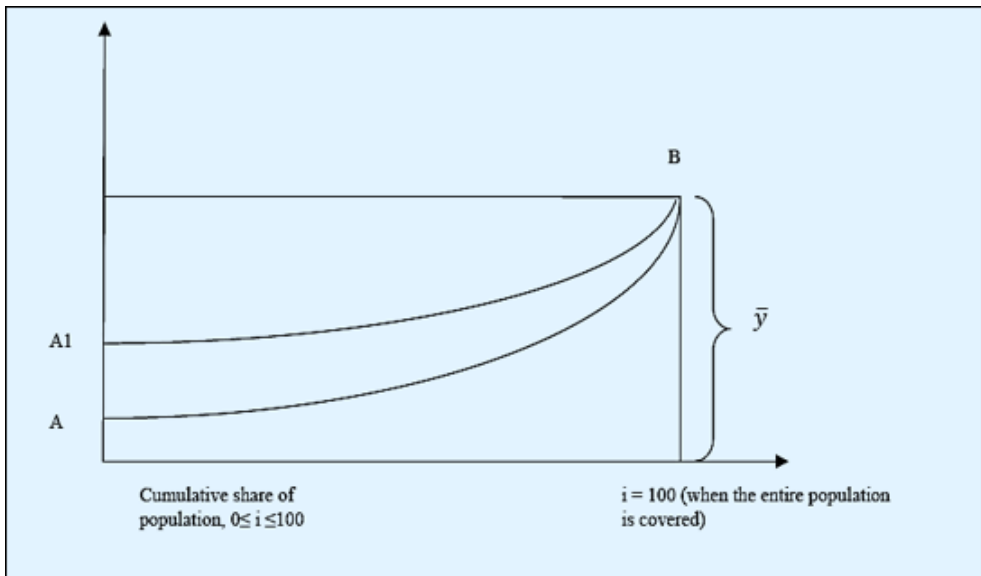**Figure 1:** *Social Mobility Curve*

By calculating the area under the social mobility curve, we can develop social opportunity index that is;

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

[2] As for the empirical analysis we will be using income as a determinant for the purpose of measuring inclusive growth hence from here we will refer income as the opportunity to be measured or assessed

The above equation presents the following points.

1. $\overline{Y}$ will be equal to $\overline{Y}^*$ in a completely equitable society.

2. If $\overline{Y}^*$ is lower than $\overline{Y}$ the distribution of income will be inequitable.

3. A higher $\overline{Y}^*$ depicts the higher level of income across all segments.

Here, $\overline{Y}$ shows on average availability of opportunities in a society $\overline{Y}^*$ shows the average opportunities available at each income quintile; hence, the difference between $\overline{Y}^*$ and $\overline{Y}$ shows an unequal distribution of opportunities. Based on this Ali and Son (2007) proposed the Income Equity index (IEI),

$$\omega_i = \frac{\overline{Y}*}{\overline{Y}} \tag{2.a}$$

In a completely equitable society, value of IEI will be equal to one.

$$\overline{Y}^* = \omega * \overline{Y} \tag{2.b}$$

Equation (2.b) defines that inclusive growth depends on average income and its distributional equity measured by the Income Equity index (IEI). This suggests that inclusive growth can be achieved by increasing $\overline{Y}$ or by increasing the value of the equity index (ω_i)

$$D\overline{y}^* = \omega_i * d\overline{y} + d\omega_i * \overline{y} \tag{3}$$

Here, $d\overline{y}^*$ represents the change in the degree of growth inclusiveness. This suggests that growth is more inclusive if $d\overline{y}* > 0$. This increase in $d\overline{y}*$ can be achieved by adopting any of these two policy measures i) growth-oriented policies that increase the average income $(d\overline{y})$ ii) policies that make the distribution of the resources or opportunities more equitable $(d\omega_i)$ (Klasen, 2010).

Following more interpretations can be drawn from equation (iii)

1- $d\overline{y} > 0$ and $d\omega > 0$ — growth is unambiguously inclusive

2- $d\overline{y} < 0$ and $d\omega < 0$ — growth is unambiguously non-inclusive

3- $d\overline{y} > 0$ and $d\omega < 0$ — can be inclusive (if the percentage change in average opportunities is greater than the percentage change in ω)

4- $d\overline{y} < 0$ and $d\omega < 0$ — can be inclusive if the percentage change in ω is greater than the percentage change in average opportunities.

The above discussion helped us to calculate our inclusive growth variable.[3] To calculate, we took GDP per capita data as the average opportunity available

[3] Our measure for inclusive growth assigns decreasing weight to higher income groups

in the society $(\overline{Y})$, for $(\overline{Y}^*)$ we averaged income share held at different income quintiles.[4]

Measuring Institutional Quality Index

To calculate the institutional quality index, we applied Principal Component Analysis (PCA) on all six WGI indicators (government effectiveness, voice and accountability, regulatory quality, control of corruption, rule of law and political stability and violence) introduced by Kaufmann and Kraay (1999). PCA uses an orthogonal transformation to convert a large number of correlated variables to a smaller number of uncorrelated variables called principal components. PCA also helps to mitigate bias which any objective weight assigning can create, as it assigns the weights for each indicator from its data.

Regression framework for IG and IQI

We have used the following regression to determine the role of institutional quality in growth inclusiveness.

$$Y^*_{i,t} - Y^*_{i,t-1} = \alpha_{it} + \beta_0 IQI_{it} + \beta_1 X_{it} + \varepsilon_{it} \tag{4}$$

In the above equation **Y***$_{i,\,t}$ **-Y***$_{i,\,t-1}$ is the log difference of $\overline{Y}^*$; IQI is the institutional quality index, measured using WGI indicators, X_{it} is the set of control variables which includes domestic credit to the private sector, inflation, merchandise trade statistics as a percentage of GDP, age dependency ratio, Government's Final consumption expenditure, and fixed investment as a percentage of GDP, while ε_{it} is the error term.

To analyze which type of institutional quality mostly describes the variation in growth inclusiveness, we have regressed Inclusive growth on Political, economic, and legal quality of institutions from 1996 to 2010 (unbalanced panel) along with the same vector of control variable.

$$Y^*_{i,t} - Y^*_{i,t-1} = \alpha_{it} + \beta_0 IQI_{Political\ it} + \beta_1 X_{it} + \varepsilon_{it} \tag{5}$$

$$Y^*_{i,t} - Y^*_{i,t-1} = \alpha_{it} + \beta_0 IQI_{Economic\ it} + \beta_1 X_{it} + \varepsilon_{it} \tag{6}$$

$$Y^*_{i,t} - Y^*_{i,t-1} == \alpha_{it} + \beta_0 IQI_{Legal\ it} + \beta_1 X_{it} + \varepsilon_{it} \tag{7}$$

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[4] as the data is available in percentage form, hence for analysis the share in absolute form is Obtained by multiplying income shares by per-capita income and divided by the population share in order to arrive at the average share at each quintile

Data Sources

The study uses the unbalanced panel data for 86 countries from 1996 to 2015 with few gaps in the initial six years. The data for two key variables (Inclusive growth and Institutional quality) has been constructed by using different methods suggested by the literature as discussed in the previous section. For constructing Inclusive growth, we have used data of Per capita Income and Income distribution held at each 20% (to assess distributional pattern) from the database of World Bank. For the construction of the Institutional quality index, we utilized WGI data sets (1996-2015), whereas to establish a deep understanding of institutional quality data for different kinds of institutional quality (economic, political and legal) has been obtained from Kunčič (2014) from 1990 to 2010. The selection of time period and the country was mostly dictated by the availability of data for our two key variables. The data of the control variable is taken from several international organizations which include World Trade Organization, World Bank National Accounts database, International financial statistics, International Monetary Fund and United Nations' population division data. The list of control variables includes; FDI, Gross fixed capital formation (% of GDP) as a proxy for fixed investment and general government final consumption expenditure (% of GDP), inflation measured by consumer price index and domestic credit to private sector and age dependency ratio.

ASSESSING GROWTH INCLUSIVENESS AND INSTITUTIONAL QUALITY

Assessing Inclusive Growth

This section provides the empirical assessment of the results obtained by using the concept of the social opportunity curve. As per our earlier discussion, an increase in inclusive growth can be achieved by increasing $(\overline{Y}^*)$ which depends on two factors; an Increasing average level of overall opportunities $(\overline{Y})$ and increasing the equity index of opportunities (ω) For conducting an assessment we have calculated change in inclusive growth $d\overline{y}^*$, change in per-capita income $d\overline{y}$ and change in equity index of income $(d\omega_i)$.

A few of the major findings are as follows:

1- Few of the world's major economies despite having higher standing on the growth map are performing quite unsatisfactorily in terms of equity surprisingly the United States managed to be in that list. From 2004 to 2016 USA's equity growth index has declined by 1.53%. Australia with a small increase in overall opportunities (1.62%) and lower equity index (-0.70%), South Africa's decline in growth of Equity index of income by 4.32%, and Germany's by 2.92% brought them in the list of lower-performing economies in terms of inclusive growth.

2- Other countries such as countries like Ethiopia, Zambia, Tajikistan, Lao PDR, Vietnam, Bosnia, and Herzegovina, and Magnolia; despite showing negative growth in terms of equity, successfully performed quite well in terms of inclusive growth which is shown by higher growth in GDP Per capita. This suggests that inclusive growth is achieved by increasing the overall opportunity whereas lower attention has been paid to the equity side of the growth.

3- Among the list of countries with higher inclusive growth very few of the high-income economies successfully secured any position.

These findings helped us to conclude that countries with a low level of an initial endowment of resources should prioritize increasing the overall resource availability rather than the distributional pattern. Secondly, countries that already have achieved a substantial rate of economic growth or made an efficient number of resources available on average to their people need to start considering the pattern of the distribution more than compared to pace.

The results suggest that neither the same level of growth nor the higher pace of growth in the two countries ensures a similar level of growth inclusiveness. As the distributional heterogeneity depends on the economy's policy making. Additionally, there are strong instances in which growth is achieved without compromising equity.

Assessing Institutional Quality

Based on the discussed methodology in the above section, we implied PCM, to identify principal components, which account for most of the variation in the data. All the three criteria discussed [See Appendix 2] suggest selecting only the first principal component. The first principal component explains 88.29% of the variation in the data. Later we transformed the original WGI data into a single composite institutional index by using the following method.

$$PC1 = X * L \qquad (8)$$

$$IQI = PC1/PC1\,(Max) * 100 \qquad (9)$$

Equation (8) shows that PC1 is obtained by multiplying data with factor loading later it is rescaled by dividing with the largest element to develop the composite index for institutional quality.

The resulting index from the above empirical implication brought several conclusions discussed as under:
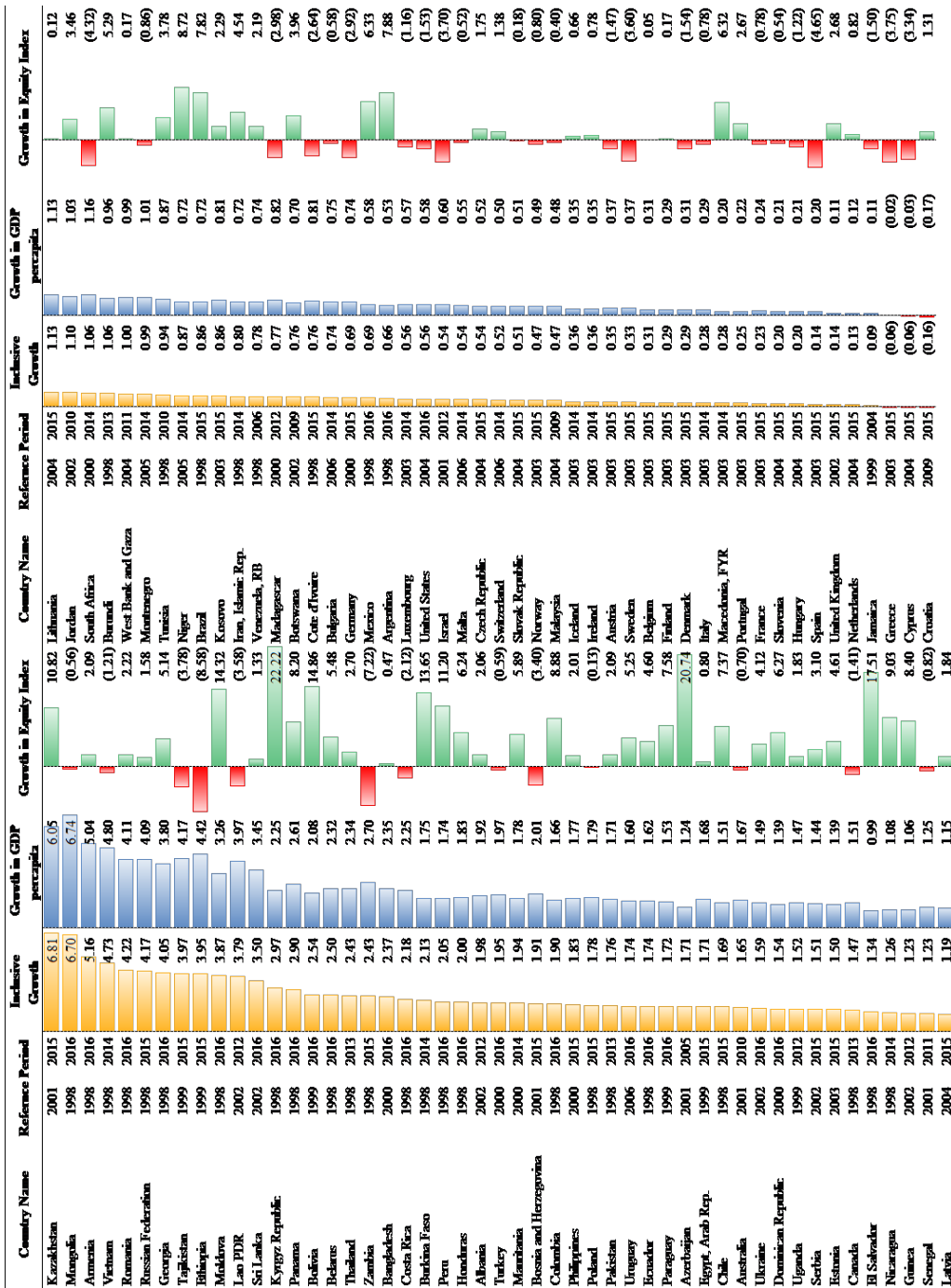
Country Name	Reference Period	Inclusive Growth	Growth in GDP percapita	Growth in Equity Index
Kazakhstan	2001-2015	6.81	6.05	10.82
Mongolia	1998-2016	6.70	6.74	(0.56)
Armenia	1998-2016	5.16	5.04	2.09
Vietnam	1998-2014	4.73	4.80	(1.21)
Romania	1998-2016	4.22	4.11	2.22
Russian Federation	1998-2015	4.17	4.09	1.58
Georgia	1998-2016	4.05	3.80	5.14
Tajikistan	1999-2015	3.97	4.17	(3.78)
Ethiopia	1999-2015	3.95	4.42	(8.58)
Moldova	1998-2016	3.87	3.26	14.32
Lao PDR	2002-2012	3.79	3.97	(3.58)
Sri Lanka	2002-2016	3.50	3.45	1.33
Kyrgyz Republic	1998-2016	2.97	2.25	22.22
Panama	1998-2016	2.90	2.61	8.20
Bolivia	1999-2016	2.54	2.08	14.86
Belarus	1998-2016	2.50	2.32	5.48
Thailand	1998-2013	2.43	2.34	2.70
Zambia	1998-2015	2.43	2.70	(7.22)
Bangladesh	2000-2016	2.37	2.35	0.47
Costa Rica	1998-2016	2.18	2.25	(2.12)
Burkina Faso	1998-2014	2.13	1.75	13.65
Peru	1998-2016	2.05	1.74	11.20
Honduras	1998-2012	2.00	1.83	6.24
Albania	2002-2012	1.98	1.92	2.06
Turkey	2000-2016	1.95	1.97	(0.59)
Mauritania	2000-2014	1.94	1.78	5.89
Bosnia and Herzegovina	2001-2015	1.91	2.01	(3.40)
Columbia	1998-2016	1.90	1.66	8.88
Philippines	2000-2015	1.83	1.77	2.01
Poland	1998-2015	1.78	1.79	(0.13)
Pakistan	1998-2013	1.76	1.71	2.09
Uruguay	2006-2016	1.74	1.60	5.25
Ecuador	1998-2016	1.74	1.62	4.60
Paraguay	1999-2016	1.72	1.53	7.58
Azerbaijan	2001-2005	1.71	1.24	20.74
Egypt, Arab Rep.	1999-2015	1.71	1.68	0.80
Chile	1998-2015	1.69	1.51	7.37
Australia	2001-2010	1.65	1.67	(0.70)
Ukraine	2002-2016	1.59	1.49	4.12
Dominican Republic	2000-2016	1.54	1.39	6.27
Uganda	1999-2012	1.52	1.47	1.83
Serbia	2002-2015	1.51	1.44	3.10
Estonia	2003-2015	1.50	1.39	4.61
Canada	1998-2013	1.47	1.51	(1.41)
El Salvador	1998-2016	1.34	0.99	17.51
Nicaragua	1998-2014	1.26	1.08	9.03
Guinea	2002-2012	1.23	1.06	8.40
Senegal	2001-2011	1.23	1.25	(0.82)
Latvia	2004-2015	1.19	1.15	1.84

Country Name	Reference Period	Inclusive Growth	Growth in GDP percapita	Growth in Equity Index
Lithuania	2004-2015	1.13	1.13	0.12
Jordan	2002-2010	1.10	1.03	3.46
South Africa	2000-2014	1.06	1.16	(4.13)
Burundi	1998-2013	1.06	0.96	5.29
West Bank and Gaza	2004-2011	1.00	0.99	0.17
Montenegro	2005-2014	0.99	1.01	(0.86)
Tunisia	1998-2010	0.94	0.87	3.78
Niger	2005-2014	0.87	0.72	8.72
Brazil	1998-2015	0.86	0.72	7.82
Kosovo	2003-2015	0.86	0.81	2.29
Iran, Islamic Rep.	1998-2014	0.80	0.72	4.54
Venezuela, RB	1998-2006	0.78	0.74	2.19
Madagascar	2000-2012	0.77	0.82	(2.98)
Botswana	2002-2009	0.76	0.70	3.96
Cote d'Ivoire	1998-2015	0.74	0.81	(2.64)
Bulgaria	2006-2014	0.74	0.75	0.58
Germany	2000-2015	0.69	0.74	(2.92)
Mexico	1998-2016	0.69	0.58	6.33
Argentina	1998-2016	0.66	0.53	7.88
Luxembourg	2003-2014	0.57	0.57	(1.16)
United States	2004-2016	0.56	0.58	(1.53)
Israel	2001-2012	0.54	0.60	(3.70)
Malta	2006-2014	0.54	0.55	(0.52)
Czech Republic	2004-2015	0.54	0.52	1.75
Switzerland	2006-2014	0.52	0.50	1.38
Slovak Republic	2004-2015	0.51	0.51	(0.18)
Norway	2003-2015	0.47	0.49	(0.80)
Malaysia	2004-2009	0.47	0.48	(0.40)
Iceland	2003-2014	0.36	0.35	0.66
Ireland	2003-2015	0.36	0.35	0.78
Austria	2003-2015	0.35	0.37	(1.47)
Sweden	2003-2015	0.33	0.37	(3.60)
Belgium	2003-2015	0.31	0.31	0.05
Finland	2003-2015	0.29	0.29	0.17
Denmark	2003-2015	0.29	0.31	(1.54)
Italy	2003-2014	0.28	0.29	(0.78)
Macedonia, FYR	2003-2014	0.28	0.20	6.32
Portugal	2003-2015	0.25	0.22	2.67
France	2003-2015	0.23	0.24	4.12
Slovenia	2004-2015	0.20	0.21	(0.54)
Hungary	2004-2015	0.20	0.21	(1.22)
Spain	2003-2015	0.14	0.20	(4.65)
United Kingdom	2002-2015	0.14	0.11	2.68
Netherlands	2004-2015	0.13	0.12	0.82
Jamaica	1999-2004	0.09	0.11	(1.50)
Greece	2003-2015	(0.06)	(0.02)	(3.75)
Cyprus	2004-2012	(0.06)	(0.03)	(3.34)
Croatia	2009-2015	(0.16)	(0.17)	1.31

Figure 2: Assessing Inclusive Growth around the Globe (Source: Authors' calculation)

1- The majority of the high-income economies[5] stood at a higher rank on the institutional quality index. Such as the United Kingdom, Finland, Sweden, Ireland, Netherlands, Australia, Switzerland, Denmark, Canada, Germany, Estonia, Luxembourg, Norway, Austria, Chile, Belgium, Lithuania, Iceland, Israel, and United States ranked among the top 20 on our IQI ranking.

2- Despite the top ranks being held by high-income countries yet their performance over almost two decades remained quite stagnant or either deteriorated. Countries like Italy, Greece, Slovenia, Uruguay, Spain, Cyprus, Austria, United Kingdom, Luxemburg, Hungary, and Denmark have shown negative growth in the IQI index while computing the change over the periods of 1996 to 2015.

3- The bottom 20 positions were majorly held by lower middle income (Nicaragua, Honduras, Tunisia, Zambia, Vietnam, Côte d'Ivoire, Ukraine, Pakistan, Iran, Islamic Rep., Argentina, Egypt, Arab Rep. Bolivia & Bangladesh) and low-income countries (Niger, Madagascar & Guinea) with an exception of Belarus, Ethiopia, Ecuador, Venezuela and RB Russian Federation belonging to the upper-middle-income country.

4- Compared to others few lower-middle-income economies and low-income economies have shown positive improvements such as Ethiopia (27.01%), Niger (18.94%), El-Salvador (18.48%), Honduras (18.06%), Madagascar (10.07%), and Vietnam (7.06%) etc.

Table 1.

Analyzing Institutional Quality Index

Country	Ran	CL	Avg. IQI	Change	Country	Rank	CL	Avg..IQI	Change
United Kingdom	1	HI	1.64759	-3.936	Panama	44	UMI	-0.3240	-10.171
Finland	2	HI	1.63639	7.533	Thailand	45	UMI	-0.0996	9.74737
Sweden	3	HI	1.61399	13.814	South Africa	46	UMI	-0.1108	-8.5119
Ireland	4	HI	1.61399	8.137	Turkey	47	UMI	-0.122	7.0845
Netherland	5	HI	1.59159	-0.966	Armenia	48	LMI	-0.1556	25.7476
Australia	6	HI	1.58039	11.445	El Sal-vador	49	LMI	-0.2004	18.4869
Switzerland	7	HI	1.52439	4.664	Albania	50	UMI	-0.2116	36.0734
Denmark	8	HI	1.51319	-1.226	Serbia	51	UMI	-0.2452	55.7102
Canada	9	HI	1.50199	6.069	Jamaica	52	UMI	-0.3012	-3.6006

Continued on next page

[5]According to world bank classification high income economies are the one whose gross per capita income US$12,056 or more

Table 1 continued

Country	Ran	CL	Avg. IQI	Change	Country	Rank	CL	Avg..IQI	Change
Germany	10	HI	1.50199	6.350	Jordan	53	UMI	-0.3348	2.58668
Estonia	11	HI	1.44599	12.148	Kazakhstan	54	UMI	-0.458	15.2315
Luxemburg	12	HI	1.43479	-2.463	Dom. Republic	55	UMI	-0.4692	9.18045
Norway	13	HI	1.37879	2.088	Philippines	56	LMI	-0.4692	-2.5867
Austria	14	HI	1.14359	-6.566	Sri Lanka	57	LMI	-0.4804	-4.6618
Chile	15	HI	1.08759	-4.948	Moldova	58	LMI	-0.5028	-6.00E05
Belgium	16	HI	1.02039	2.279	Senegal	59	LI	-0.6036	-1.3827
Lithuania	17	HI	1.00919	5.917	Brazil	60	UMI	-0.6372	-18.849
Iceland	18	HI	0.99799	0.563	Azerbaijan	61	UMI	-0.7044	86.3948
Israel	19	HI	0.99799	5.621	Uganda	62	LI	-0.7156	-10.134
United States	20	HI	0.98679	-8.484	Paraguay	63	UMI	-0.7268	12.1574
Malta	21	HI	0.88599	6.116	Mongolia	64	LMI	-0.8164	-8.4523
France	22	HI	0.84119	2.388	Burkina Faso	65	LI	-0.8388	-3.5007
Czech Republic	23	HI	0.80758	0.890	Nicaragua	66	LMI	-0.8612	2.68873
Latvia	24	HI	0.79638	5.938	Honduras	67	LMI	-0.8724	18.0169
Cyprus	25	HI	0.76279	-5.618	Tunisia	68	LMI	-0.8836	-22.545
Poland	26	HI	0.69558	9.272	Zambia	69	LMI	-0.9172	2.19835
Portugal	27	HI	0.65079	-7.387	Vietnam	70	LMI	-0.962	7.06048
Spain	28	HI	0.48278	-10.633	Cote Di Voire	71	LMI	-0.9844	-5.2643
Slovak Republic	29	HI	0.46038	4.040	Russ. Federation	72	UMI	-1.0068	-4.8138
Hungary	30	HI	0.43798	-2.540	Ukraine	73	LMI	-1.0852	-9.0445
Malaysia	31	UMI	0.41558	0.974	Pakistan	74	LMI	-1.13	-6.7054
Italy	32	HI	0.39318	-4.114	Niger	75	LI	-1.242	18.9449
Slovenia	33	HI	0.28118	-13.570	Madagascar	76	LI	-1.2868	10.0747
Romania	34	UMI	0.24758	24.467	Egypt	77	LMI	-1.3652	-35.117
Bulgaria	35	UMI	0.20278	34.912	Guinea	78	LI	-1.3988	-2.0553
Costa Rica	36	UMI	0.16918	-0.701	Bolivia	79	LMI	-1.4212	-38.702
Peru	37	UMI	0.12438	0.000	Bangladesh	80	LMI	-1.4324	2.19046
Colombia	38	UMI	0.10198	26.488	Argentina	81	UMI	-1.4436	-50.716
Botswana	39	UMI	0.06838	-7.119	Belarus	82	UMI	-1.5332	8.26717

Continued on next page

Country	Ran	CL	Avg. IQI	Change	Country	Rank	CL	Avg..IQI	Change
Uruguay	40	HI	0.04598	-13.377	Ethiopia	83	LI	-1.578	27.0108
Greece	41	HI	0.03478	-4.578	Ecuador	84	UMI	-1.7236	-42.722
Croatia	42	HI	-0.0212	24.887	Iran	85	LMI	-1.8916	12.5056
Mexico	43	UMI	-0.0212	9.466	Venezuela	86	UMI	-2.53	-78.91

Average value of IQI is taken to assign ranks to the countries whereas change shows the change in the value of IQI over the period of 1996 to 2015. Here, HI* High Income Economies; UMI* Upper middle-income economies; LMI* Lower Middle-Income Economies; LI* Lower Income Economies

Institutional Quality and Inclusive Growth Nexus

To identify the role of institutional quality in promoting inclusive growth, the study utilized unbalanced panel data of 86 countries from 1996 to 2015. In Table 2 Column 1 presents the result of fixed effect estimates corrected for heteroscedasticity. The robust results were obtained due to the presence of heteroscedasticity.   The results of the Modified Wald test for group-wise heteroscedasticity reflect the presence of heteroscedasticity (Engle, 1984) (Appendix 3). The test presented the evidence against our null hypothesis of homoscedasticity (or constant variance) hence, the robust results for fixed effect were obtained which automatically corrects standard errors for heteroskedasticity. For the selection of an appropriate panel data model for our objective, we have applied the Hausman specification test to choose between FE and RE (Hausman, 1978). The results obtained from the Hausman test suggested FE technique is more appropriate. The basic null hypothesis for Hausman's preferred model is random effect against the alternative hypothesis of fixed effect. The Chi square probability of the Hausman test is less than 0.05 hence fixed effect coefficients and results are more appropriate for our analytical study Appendix 3.

Our results for control variables suggest that inflation, government final consumption and age dependency ratio have a negative and significant effect on inclusive growth. This suggests that inflation by reducing the real purchasing power further deprives the masses of accessing certain resources hence reducing the inclusivity while; a higher dependency ratio itself reflects the exclusion of a high number of individuals from the growth process (Anand et al., 2013) Another set of control variables by showing significant positive association such as trade openness, financial deepening, and fixed investment suggests that they have helped countries achieve growth inclusiveness. However, FDI does not appear to have any positive and significant association. Our key variable Institutional quality has shown a significant and positive association with inclusive growth.   As the institutional quality variable is calculated by

implying PCM on WGI indicators which predicts the complete social, economic, political, and legal aspects of institutional quality hence, our variable depicts the relationships among the overall quality of institutions without being specific to any particular type of institution or neglecting any of them and inclusive growth. Column 2 to 4 of Table 2 shows that economic and political institutions influence inclusive growth positively and significantly while legal institutions are found to have an insignificant negative association with growth inclusiveness. As average opportunities availability majorly relies on economic institutions, the difference in efficacy of economic institutions is translated by differences in political institutions. Acemoglu and Robinson (2008). The results agree with the theoretical understanding of Ali and Son (2007) as they argued that the initial and first most requirement for inclusive growth is to take political and economic institutions on board to make result-oriented policies.

DISCUSSION

The findings presented above have various implications for policymakers around the world. The resulted empirics brought some thoughtful insights. Countries with higher economic growth could be performing quite unsatisfactory in terms of equity. Theories suggest two major possibilities behind such results, Firstly, the growth policies are designed in such a way that their benefits are mainly being enjoyed by the individuals belonging to upper income segments of the society secondly the policies completely neglect the marginalized segments. Limiting the probability of accessing the opportunities, generated by the growth process, widens the gap among classes (Derviş & Qureshi, 2016; Keskin, 2017). The second observation was that few of the lower income economies performed quite well in terms of equity one of the justifications for such results are that lower income economies have lower level of initial inequality. Hence, as they progress the expansion of average opportunities contract the gap further among their marginalized and upper income segment ensuring growth inclusiveness. The above two observations made us to conclude that countries already enjoying substantial amount of economic growth needs to focus on the pattern more than compared to pace. Countries with lower level of initial endowment can achieve inclusiveness, through increasing the average opportunities. As discussed, inclusive growth can be achieved by designing policies that result in improved and equitable opportunities distribution. Policies that target economic inequalities and ensure better access to the existing and newly created economic opportunities can create an inclusive economic environment (Agyei & Idan, 2022). There are also several areas for further development, as the study limited itself to cover only one aspect of opportunity, which is an income opportunity. Nevertheless, the theory suggests that income itself defines access to several

Table 2.

Institutions and Inclusive Growth (Fixed effect estimates)

Variables	Institutional Quality Index	Legal Institutions	Political Institution	Economic Institution
Institutional Quality	0.1721659***	-0.02674	0.2936572**	0.2670272***
	0.0515492	0.1025598	0.1157987	0.0873898
Government Consumtipn (% GDP)	(0.0099607)*	(0.0107225)***	(0.0108314)***	(0.0110659)***
	0.0054816	0.0028574	0.0028238	0.0028152
Fixed Investment (%GDP)	0.0015526***	0.0028532***	(0.0028067)***	0.0026958***
	0.0003623	0.0002775	0.0002754	0.0002784
Financial Deepening	0.0005652**	(0.0004915)*	(0.0004863)*	(0.0005587)*
	0.0002524	0.0002907	0.0002879	0.0002875
Trade openness	0.001674***	-0.0000132	-0.0000398	-0.000173
	0.0004402	0.0003007	0.0002931	0.0002958
Inflation	(0.0008598)**	(0.0007802)**	(0.0006832)**	(0.0006376)**
	0.0003396	0.000318	0.000314	0.0003139
Dependency Ratio	(0.0021337)**	(0.0047559)**	(0.0049474)***	(0.0050266)***
	0.000922	0.001425	0.0014085	0.0014038
Foreign Direct Investment	-0.0000446	0.0000578	0.0000619	0.0000513
	0.0000744	0.0001692	0.0001677	0.0001671
cons	0.3122526***	0.4724296***	0.4838885***	0.4920386***
	0.1125186	0.0926141	0.0913076	0.0910788
No. of observation	733	455	455	455
No. of groups	81	79	79	79
R-squared	0.33	0.34	0.35	0.35

Note:(In column 1) Dependent variable inclusive growth is regressed on IQI (composite indicator for measuring institutional quality measured using WGI dataset) and number of control variables, Panel estimations with fixed effects (FE corrected for heteroskedasticity) estimated where '***", '**', '*' denote significance at the 1, 5, or 10 percent level, respectively.
For columns 2 to 4 inclusive growth is regressed for the quality of different institutional arrangements (Economic, Legal and political). The period for column 1 1996 to 2015 whereas for column 2 to 4 1996 to 2010.
Dependent Variable: Growth in $\overline{Y}^*$ (inclusive growth)

other opportunities. Yet, a detailed analysis of access to other opportunities such as health care and education can broaden the horizon.

CONCLUSION

The purpose of this study was twofold: first to assess the existing position of the countries on the inclusive growth map, and second to investigate the link between inclusive growth and institutional quality within the context of 86 countries around the world including the representation of countries from different income classification. The study is relevant to the current scenario of rising inequality within and across countries, especially for the policymakers who must balance this growth and inequality trade-off. The evidence shows that a higher quality of institutions helps in translating economic growth policies into inclusive growth-oriented. The result supports the main hypothesis of a positive association between institutional quality and inclusive growth around the world. Furthermore, by using the institutional quality dataset constructed by Kunčič (2014) for different institutional arrangements the study concludes that the quality of economic and political institutions matters most for inclusive growth. Looking forward, several issues need to be addressed first before implementing an inclusive growth policy such as infrastructural improvement, distributional equity, and institutional quality. The way economies react to policies differently stresses the need for improving the quality of institutions, to make any policy inclusive and growth-oriented. Furthermore, a tremendous amount of effort is required to link macroeconomic policies with inclusive growth instead of limiting them to growth only.

REFERENCES

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). 'The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, *102*, 1231–1294. https://doi.org/10.1257/aer.91.5.1369

Acemoglu, D., & Robinson, J. (2010). The role of institutions in growth and development. . *Leadership and growth*, 135. https://doi.org/10.5202/rei.v1i2.14

Acemoglu, D., & Robinson, J. A. (2008). Persistence of power, elites, and institutions. *American Economic Review*, *98*(1). https://doi.org/10.1257/aer.98.1.267

Adedeji, M. O., Du, H., & Opoku-Afari, M. M. (2013). *Inclusive growth: An application of the social opportunity function to selected African countries.* International Monetary Fund.

Agyei, S. K., & Idan, G. A. (2022). Trade Openness, Institutions, and Inclusive Growth in Sub-Saharan Africa. *SAGE Open*, *12*(2). https://doi.org/10.1177/21582440221099008

Alexiou, C., Tsaliki, P., & Osman, H. R. (2014). Institutional quality and economic growth: Empirical evidence from the Sudanese economy. *Economic Annals*, *59*(203), 119–137. https://doi.org/10.2298/EKA1403119A

Ali, I., & Son, H. H. (2007). Measuring inclusive growth. *Asian Development Review*, *24*(1), 11–31.

Ali, I., & Zhuang, J. (2007). Inclusive growth toward a prosperous Asia: Policy implications. *ERD Working Paper Series*(97). https://doi.org/10.7135/UPO9780857288066.003

Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2018). *The Elephant Curve of Global Inequality and Growth.* https://doi.org/10.1257/PANDP.20181073

Anand, R., Mishra, M. S., & Peiris, S. J. (2013). Inclusive Growth Measurement and Determinants. *Inclusive growth: Measurement and determinants (No. 13-135)*, *2013*(135), 1–27. https://doi.org/10.5089/9781484323212.001

Aoyagi, C., & Ganelli, G. (2015). Asia's quest for inclusive growth revisited. *Journal of Asian Economics*, *40*, 29–46. https://doi.org/10.1016/j.asieco.2015.06.005

Bluhm, R., & Szirmai, A. (2011). *Institutions, Inequality and Growth: A review of theory and evidence on the institutional determinants of growth and inequality.* https://doi.org/10.1016/j.euroecorev.2018.03.003

Chong, A., & Gradstein, M. (2007). Inequality and institutions. *The Review of Economics and Statistics*, *89*(3), 454–465.

Derviş, K., & Qureshi, Z. (2016). *Income distribution within countries: Rising inequality.* https://doi.org/10.34118/jeemr.v3i1.691

Dollar, D., & Kraay, A. (2003). Institutions, trade, and growth. *Journal of monetary economics*, *50*(1). https://doi.org/10.34118/jeemr.v3i1.691

Doumbia, D. (2019). The quest for pro-poor and inclusive growth: The role of governance. *Applied economics*, *51*(16), 1762–1783.

Eldomiaty, T. I., Qassemi, T. B. F., Mabrouk, A. F., & Abdelghany, L. S. (2015). Institutional quality, economic freedom and stock market volatility in the MENA region. *Macroeconomics and Finance in Emerging Market Economies*, *9*(3), 262–283. https://doi.org/10.1080/17520843.2015.1093011

Engle, R. F. (1984). Wald, likelihood ratio, and Lagrange multiplier tests in econometrics. Handbook of econometrics., *2*, 775–826.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the econometric society*, 1251–1271.

Hodgson, G. M. (2012). Thorstein Veblen: The father of evolutionary and institutional economics. . *Thorstein Veblen: Economics for an Age of Crises*, 283–296. https://doi.org/10.7135/UPO9780857289223.012

Ianchovichina, E., & Gable, S. L. (2012). *What is Inclusive Growth?‖ in Commodity Prices and Inclusive Growth in Low-Income Countries* (R. Arezki, C. Pattillo, M. Quintyn, , & M. Zhu, Eds.). International Monetary Fund. https://doi.org/10.1080/21568316.2018.1541817

Ianchovichina, E., & Lundström, S. (2009). *Inclusive growth analytics: Framework and application.* https://doi.org/10.1596/1813-9450-4851

Iheonu, C., Ihedimma, G., & Onwuanaku, C. (2017). *Institutional quality and economic performance in West Africa.*

Josifidis, K., Supić, N., & Beker-Pucar, E. (2017). Institutional quality and income inequality in the advanced countries. *Panoeconomicus*, *64*(2), 169–188. https://doi.org/10.2298/

PAN1702169J

Keskin, A. (2017). Income Distribution and Economic Growth: A Complementary Cross Country Study to the Kuznets Curve. *Afyon Kocatepe University Journal of Social Sciences*, *19*(2).

Klasen, S. (2010). *Measuring and monitoring inclusive growth: Multiple definitions, open questions, and some constructive proposals.* Asian Development Bank. Retrieved from http://hdl.handle.net/11540/1404

Kraay, A., Zoido-Lobaton, P., & Kaufmann, D. (1999). Aggregating governance indicators. . *The World Bank*. https://doi.org/10.1596/1813-9450-2195

Kunčič, A. (2014). Institutional quality dataset. *Journal of institutional economics*, *10*(1), 135–161. https://doi.org/10.1017/S1744137413000192

Lindert, P. H., Williamson, J. G., Lindert, P. H., & Williamson, J. G. (1985). Growth, equality, and history. *Explorations in Economic History*, *22*(4), 341–377.

Nawaz, S., Iqbal, N., & Khan, M. A. (2014). *The impact of institutional quality on economic growth: Panel evidence. The Pakistan Development Review.* https://doi.org/10.30541/v53i1pp.15-31

North, D. C. (1991). Institutions. *Journal of economic perspectives*, *5*(1), 97–112.

North, D. C., & Thomas, R. P. (1973). *The rise of the western world: A new economic history.* Cambridge University Press.

Sonin, K. (2003). Why the rich may favor poor protection of property rights. *Journal of comparative economics*, *31*(4), 715–731. https://doi.org/10.1016/j.jce.2003.09.005

Tran, N., Cameron, M. P., & Poot, J. (2017). *International Migration and Institutional Quality in the Home Country: It Matters Where You Go and How Long You Stay.* https://doi.org/10.1111/imig.12451

Zhuang, J., & Ali, I. (2010). *Poverty, inequality, and inclusive growth in Asia. Poverty, Inequality, and Inclusive Growth: Measurement, Policy Issues, and Country Studies.* https://doi.org/10.7135/UPO9780857288066.003
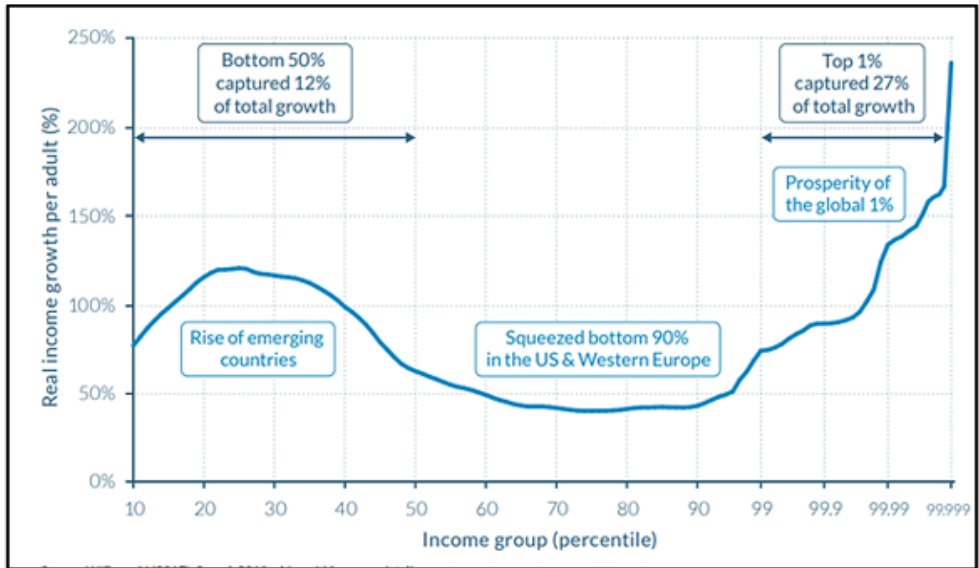
APPENDIX-1

Figure A. 1: *The elephant curve 1980-2016. Source: World Inequality report (2018)*
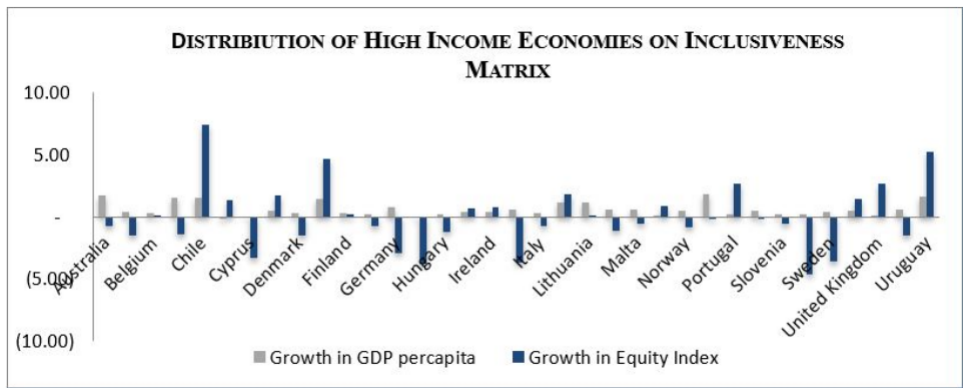

Figure A. 2: *Distribution of Economies on Inclusiveness Matrix*

APPENDIX-2

Table A. 1.
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Control of Corruption	1463	0.23344	1.04892	-1.5	2.47
Government effectiveness	1463	0.3384	0.95312	-1.32	2.35
Political stability and violence	1463	0.07577	0.9032	-2.81	1.76
Rule of law	1463	0.24493	1.0028	-2.03	2.1
Regulatory Quality	1463	0.37895	0.89285	-1.88	2.1
Voice and accountability	1463	0.31743	0.89603	-1.77	1.8

Table A. 2.
Correlation Coefficient Matrix

	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			
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

Table A. 3.
Principal Component Analysis

Principal components/correlation						
Eigenvalue	5.2974	0.3644	0.1772	0.0924	0.0391	0.0292
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

Above three tables are based on WGI on 88 countries where CC: control on corruption, GE: government effectiveness, PSV: political stability and violence, RL: Rule of law, RQ: regulatory quality and VA: Voice and accountability.
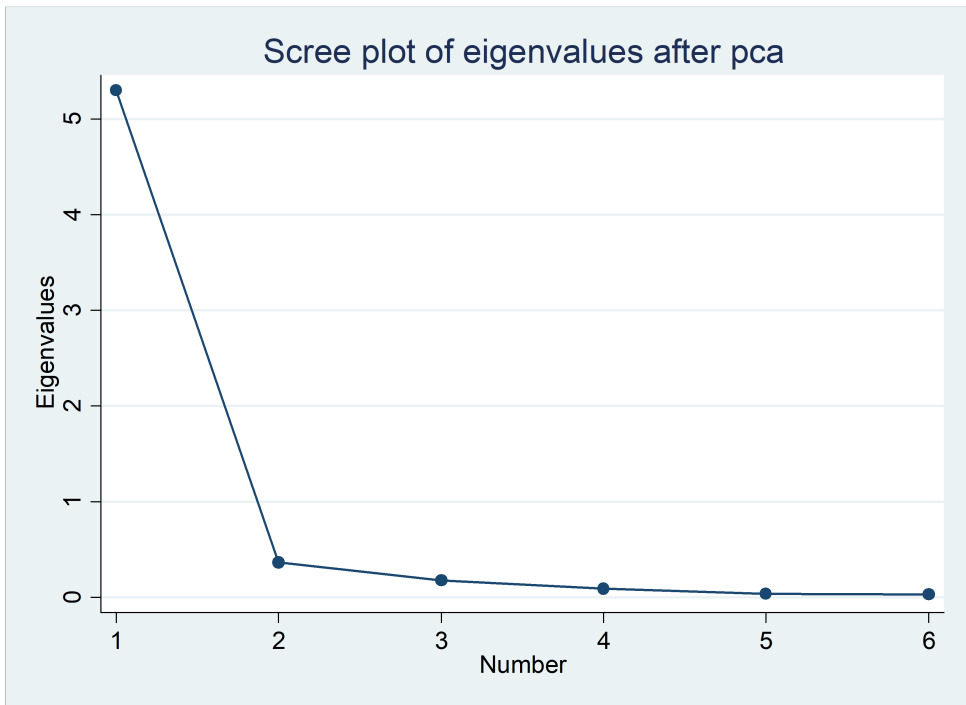
Figure A. 3: *Cattell Scree test for component selection*

1. Proportion of variance that a certain component explains in Table A. 3 we can see that the cumulative proportion held by component one is 0.8829 whereas this proportion for rest of the component is below 10% which implies that only component-1 need to be used for the analysis.

2. Eigenvalues: Another measure to identify principal components is to check the size of Eigen values. Kaiser-Harris criterion suggests retaining any principal component whose eigenvalue is 1 or greater than 1. In Table A. 1 we can see that only component-1 had an eigenvalue greater than 1 (5.29746).

3. Cattell Scree test, the eigen values are plotted against their component number components before any bend are selected as principal components in our case the bend comes at component-2 hence only component 1 can be selected as principal component.

APPENDIX-3

Table A. 4.
Hausman test for model selection

Hausman Test Results For Model Selection (Fixed Vs. Random)				
Test: Ho:	difference in coefficients not systematic (Random Effect)			
Test: Ha:	difference in coefficients is systematic (Fixed Effect)			
	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**
chi2(8) =	34.09	41.66	41.68	35.51
Prob>chi 2 =	0.00	0.00	0.00	0.00

Table A. 5.
Modified Wald test for group wise heteroskedasticity in fixed effect regression Model

Modified Wald test
H0: sigma(i)^2 = sigma^2 for all i
chi2 (81) = 1241.54
Prob>chi2 = 0.0000