Policy Framework for Inclusive Growth:
A Case Study of Selected Asian Countries

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Abstract

This study analyzed the long run and short run impacts of education, health, trade openness, inflation, GDP per capita and most importantly umbrella of institutions on inclusive growth in for less and middle developed Asian countries. The results from VECM provide evidences for inclusive growth in the long run but not for short run, as it itself is a long run phenomenon. Indicators like regulatory quality, political stability, law and order, control of corruption and trade openness are used to highlight the institutional role in achieving inclusive growth. On the other hand, the impact of GDP per capita and government effectiveness on health is significant in these countries. Empirical findings also indicate that Inflation and rule of law play a significant role in improving the health quality, which leads to inclusive growth. Study also forecasts the effect of shocks in independent variables to inclusive growth for policy measures. The long lasting impacts on inclusive growth are the result of education, GDP growth, umbrella of institutions and rule of law. The absence of such factors restricts developing countries away from reaping the benefits of inclusive growth. Therefore, it is suggested that major focus of public policy must be to improve institutional quality along other socioeconomic factors to improve the human welfare.

Keywords: Inclusive Growth, Institutions, South Asian Countries, VECM, IRF

JEL classification: D31, E61, I15, I21, O12, O43

1.   Introduction

The concept of economic growth was improved to economic development, which covered a larger framework of aspects required to improve human welfare. Conversely, the welfare of masses still remained an un-achieved agenda. Poverty in the developing countries continued a persistent issue (in most cases, dismally

increasing). Large segments of society in this poverty stricken areas remained excluded from the benefit of economic growth[2]. As a result, new paradigm to improve human welfare was provided in the form of inclusive growth. Inclusive growth includes gainful employment of the neglected segment (poor & deprived people) of the society ensuring that they are a part of decision making, thereby, to be heard (Sen's idea of development as freedom; Sen, 1999)[3]. Inclusiveness is a notion that encompasses equity, equality of opportunity, protection in market and employment according to capability (World Development Report, 2010). Ranieri and Ramos, (2013) defines inclusive growth as both an outcome (ensures that everybody can add to the growth process by their active participation in decision-making) and a process (makes sure that each person reaps equitable fruits of growth), which benefits poor and reduces poverty as a result of economic development. The major focus of inclusive growth is; a) sustainable economic growth, b) diminution in poverty, c) attenuation of income and equal opportunity in decision making, improvement of income inequality and removal of inequalities for access to health services, as well as, equal opportunities for education. d) Creation of gainful employment for neglected segment of society. It is essential to note that above mentioned results can't be achieved without embracing system with strong institutional structure. In Asia, many countries remained unsuccessful in perking up the average standard of livings in region, despite of its' triumph in reducing the numeral figures of poor populace; from 2 billion during the decade of 1990s to 1.62 billion during 2000's[4]. Thus, something is missing that is required in addition to poverty suppression and lofty growth rates to achieve an equitable shared growth by all, and that is 'inclusive growth'. For example South Asia represents poor performance in sense of inclusive growth. It covers nearly 20% of world's population and not having 2% of the world's income. A similar inequality prevails within Pakistan; bottom 20% population hardly received 7.5% of national income.

The empirical literature for selected countries of Asia, pertaining to poverty and income inequalities conditions over time indicates that the highest level of poverty among the sample countries was 60 percent, and dropped to 43 percent in Bangladesh[5]. Income inequality in Bangladesh is decreased by two points of Gini index from 33 to 31 which is lesser than countries having low

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[2] Absolute poverty was 400 million person in S. Asia and over 900 million in S. Africa in2014.

[3] For more details, see Development as Freedom by Amartya Sen.

[4] These estimates are taken from Asian Development Bank according to $2/day poverty line. On $1.25 /day, the estimates are 0.79 billion for years 2000-2010 and 1.23 billion for 1990-1999.

[5] For detail see appendix Table-1

poverty growth rates such as Kazakhstan, Kyrgyzstan, Bhutan and Cambodia. Tajikistan and Vietnam has improved in poverty conditions; to as much as 26 percent and 35 percent, respectively among sixteen Asian countries. Conversely, their income inequalities increased by 5% and 2%; rather than decrease in it, which is unlike to their poverty reduction's lofty figures. The development without exalting the living standards of people and reducing income inequalities seems failure to improve welfare of masses.

Despite of the fact that middle developed countries (MDC's) have curtailed poverty from 16% in 1990s to 9% in 2000, their income disparities exacerbated to 1-2 percent on an average. On the other hand, less developed countries (LDC's) have been successful in shrinking both their income inequality and poverty growth rates. On the contrary, the magnitude of reduction in growth rate of inequalities is far less than growth rate change in poverty for LDCs too. Correspondingly; inequalities have substantially risen in Indonesia, Malaysia, Pakistan, India, Tajikistan and Vietnam, in spite of shrinkages in their poverty rates. The reduction in poverty rates along with high GDP growth rate is only one -half of the story of the policies pursued for economic development. The development leading to improve only the living standards of people and reducing income disparities will still leads to social, political and economic chaos. Thus, it is indispensable to look for factors that contribute to inclusive growth across countries. Moreover, studying the changing pattern of determinants of inclusive growth across countries will help to chalk out policies to achieve inclusive growth.

The rest of the study is organized as follows: section II briefly describes the existing literature on the issue, section III deals with methodology and data sources, section IV gives discussion on empirical results, and finally section V is specified for conclusions and policy implications.

2.   Literature Review

There is an ample body of literature on positive and negative relationships between poverty and economic growth, as well as nexus with inclusive growth. Anand and Sudhir, (1997) reported a significant role of public expenditures on health and education in subliming standard of living of poor countries. El Aynaoui, (2005) deliberated on the linkages between aid, public expenditures, poverty and growth. He forge a positive externalities of aid can be washed of easily when the elasticity of poverty with respect to growth is petite. Alvi and Senbeth, (2012) have formulated a positive role of aid in decelerating growth. Agenor, (2005) argued that inflation has dual effect on increasing the poverty

levels by reducing real disposable income and therefore affecting standard of life. Hughes and Irfan, (2007) have emphasized on the role of human capital on economic growth and poverty reduction. Shorroks and Van Der Hoeven, (2004) have emphasized that poverty can be reduced at a faster pace when inclusive growth policies are undertaken.

Aziz, (2002) premeditated the growth-poverty relation and concluded that prices played a significant role in reducing poverty as compared to income alteration during the Asian financial crises in 1997-1998. Ferrira and Ravallion, (2008) have delved into the relationships of poverty, growth and inequality, and established no correlation between economic growth rates and income changes. Nonetheless, this study instituted a strong positive relationship between growth rates and poverty reduction. Poverty reduction due to economic growth may be a necessary but not a sufficient condition; since, it doesn't ensure the eminence of standard of living for the welfare of poorer nations. Zhuang, (2008) broached policies for reducing inequalities and acquiring inclusive growth data set for Asian countries. The study identified five general causes of inequalities like economic liberalizations, institutional rigidities, market activities, resource allocations and economic reforms. Other considerations may implicate religious background, parental education, family systems, gender inequalities and location where a person resides. This study presented a sound theoretical framework through three pronged strategy (improving access to market, enhancing human capabilities and improving social nets) to achieve inclusive growth but lacks in scientific methodology to test the determinants of inequalities and how the growth has been achieved.

Habito, (2009) also examined the case of Asian countries and reported that sectoral composition of economy and their growth, public investments and quality of governance positively contribute to inclusive growth. All these studies have not considered the role of institutions in analyzing the factors that contribute to inclusive growth. Dablis-Norris, (2015) contributed to the existing literature on inclusive growth by introducing the role of inequality and its sustainability and income distribution in it. Findings of the study suggest that need of hour is to focus on such reforms that would increase human capital, skills and progressive tax systems.

Sadaf and Chaudhary, (2011) investigated the issue using data from 1970 to 2011 for Pakistan, and concluded that curtailing poverty will enrich the welfare of human beings. Empirical findings of the study established the notion that employment generation, development of infrastructure, poverty reduction, income

inequality, gender equity, education, sanitation and social protection have hardly any significant progress towards inclusive growth during the period of 1970-90, and condition become further worse in the next era 1990-2011. Nabi, (2008) simply compared six social indicators such as infant mortality rate, less than five years of age mortality rate, total fertility rate, primary school enrollment, access to potable water and access to improved sanitization along with other economic factors to look at inclusive growth in Pakistan. Besides these studies' contribution in literature, these have ignored the role of institutions which play a significant role in development of any countries.

Singh, (2012) has spotlighted on the determinants of underground economy and role of institutions in growth. The findings of the study show that weak institutional structure offers incentives for firms to hide their illegal activities in underground economy and retard the pace of growth. Study has contributed to the literature through introducing six measures of institutions but also ignored the role of gender equality, education, health quality, openness and inflation. Sandy, (2013) created the linkages between quality of institutions, economic policies and creation of employment. Empirical findings indicate that economic policies based on GDP growth can accelerate inclusive growth. Sen, (2014) argued that institutional factors which results in acceleration of growth are not similar with the factors that led to the growth maintenance. Results indicate that growth maintained in presence of institutions lead to inclusive growth more than the growth acceleration phases. Moreover, the preconditions for growth acceleration conclude that these growth accelerations are not always inclusive.

The above mentioned discussion reveals that none of study has comprehensively investigated the issue of inclusive growth in Asian economies. Studies that have analyzed the case of inclusive growth are either failed in examining the role institutions in it or not used the appropriate methodology for it. Therefore a comprehensive study is needed which must be based upon developing and middle income group to bridge the literature gap, and highlight how middle income group countries are able to improve inclusive growth. For this purpose theoretical framework is developed in the next section

3. Theoretical Model and Estimation Methodology

The basic growth–poverty model propounded by Ravallion, (1997; 2008) and Ravallion and Chen, (1997), as well as, frameworks posited by Dollar and Kraay, (2002) and Anyanwu, (2013) delves on the relationships of poverty and inclusive growth by instituting the following equation;

$$(P_{it}) = \alpha_i + \beta_1 (G_{it}) + \beta_2 (Y_{it}) + \beta_3 (X_{it}) + e_{it} \ldots\ldots (1)$$

Where i exhibits number of countries, t time period from 2000-2015. 'P' represents head count ratio of poverty, G serve as Gini index, 'Y' shows real per capita GDP, 'e' act in place of error term that includes errors in the poverty measure, 'X' imitates controlling variables including inflation, trade openness, health expenditures, education. Following Erra and Dablis, (2005), following equation is used to examine inequality and it's determinants:

$$(IG_{it}) = \alpha_i + \beta_1 (P_{it}) + \beta_2 (Y_{it}) + \beta_3 (v_{it}) + e_{it} \ldots \ldots (2)$$

Where 'v' serve as control variables including technology, government spending, institutions and trade openness. The study implies VECM technique to estimate above mentioned equations using a composite inclusive growth variable on the guidelines of Kunal Sen, (2014) and Anyanwu, (2013).

The secondary data for selected Asian Countries[6] is used for the time period 2010-2014 unbalanced panel data. The data sources are World Development Indictors (WDI, 2015), International Financial Statistics (IFS, 2013), International Country Risk Guide (ICRG) and Worldwide Governance Indicators (WGI).

3.1 . Performance of inclusive Growth Variables and Correlation Matrix

The statistical summary of variables is shown in Table-1. The average value of figure 50 for inclusive growth (IG) in Table-1 shows high income inequality and poverty among the set of countries and it will serve in deducing appropriate results for inclusive growth. The minimum value reported for inclusive growth is 21 and maximum value reported is 95 in data set. The minimum value of IG is from high income group and higher value is from low income group. The average value is almost 50, which provides a high incidence of poverty and inequality in data set. The average GDP per capita (PPP) of data set is 7535 US $ with a maximum of 24,459 US $ and a minimum of 1185 US $. Similarly, all the umbrella of institutions including government effectiveness, regulatory quality, voice accountability, and political stability, rule of law and order and control of corruption also lies below one, which requires a policy call to improve institutional quality so that inequalities and poverty may be reduced. The average inflation in selected Asian countries data is calculated to one digit (figure of 8); however, it is still very high and must be reduced to optimal and natural level.

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[6] Bhutan, Pakistan, Bangladesh, Kyrgyzstan, Cambodia, Philippines, Tajikistan, India, Iran, Sirilanka, China, Indonesia, Kazakhstan, Malaysia, Thailand and Vietnam

Table 1: Statistical Summary of Variables

Variables	Obs.	Average	Std. Dev.	Min	Max
Inclusive growth (Pov + Gini)	123	48.665	14.718	21.25	94.33
GDP per capita (y)	255	7535.6	5641.9	1185.6	24459.7
Trade Openness (open)	252	89.337	44.569	25.5	220.4
Health Quality (HQ)	238	312.14	271.95	28.9	1414.5
Inflation (inf)	254	8.2800	7.0074	-5.99	36.46
Education (Edu)	255	104.08	10.684	70.4	134.53
Government Effectiveness (Gov)	255	-0.265	0.5420	-1.26	1.25
Regulatory quality (Reg)	255	-0.404	0.5168	-1.73	0.84
Voice Accountability (VA)	255	-0.718	0.5695	-1.68	0.51
Political stability (Pol)	255	-0.711	0.8056	-2.81	1.31
Rule of Law & order (Law)	255	-0.442	0.5469	-1.43	0.64
Control of Corruption (Cor)	255	-0.536	0.5334	-1.49	1.27

Source: calculated by author.

Table-2 provides correlation statistics for the variables and result of pair-wise correlations reveals a negative relationship between inclusive growth[7] with openness, health quality, inflation and all institutions. This means that joint reduction in poverty and inequalities would lead to more inclusive growth when openness, education, health quality, inflation and institution will improve or increase in case of Asia, and these are as predicted results of VECM[8].

4. Empirical Results and Discussion

Study used unit root tests to check the stationarity of data series. If the data is found stationary at level, it allows proceeding to OLS. However, if data is not stationary at level, but at first difference, then co-integration test is the most appropriate technique for estimation. Study used Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test to look for stationarity of twelve variables, as results are shown in Table-3. Results indicate that all variables are not stationary at level but found stationary at first difference using unit root test with intercept and trend as bench mark. This demonstrates that all variable have integrating order one i.e. I(1), which enables to apply co-integration test for panel data (KAO residual test).

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[7] IG is read opposite to the sign of poverty and inequality in model. This means that as poverty and inequality would reduce, inclusive growth would rise and vice a versa.

[8] VECM looks not for signs but only the short and long run causalities.

Table 2: Correlation Matrixes of Variables

C.M	IG	OPEN	HQ	GDP	INF	EDU	GOV	REG	LAW	CORR	VA
(POV+INQ)	1										
OPEN	-0.18	1									
HQ	-0.55	0.11	1								
Y	-0.54	0.07	0.84	1							
INF	-0.24	-0.04	0.09	0.005	1						
EDU	-0.11	0.09	0.03	-0.04	-0.12	1					
GOV	-0.07	0.23	0.36	0.47	-0.36	-0.13	1				
REG	-0.16	0.33	0.21	0.35	-0.40	-0.04	0.68	1			
LAW	-0.06	0.17	0.32	0.37	-0.36	-0.16	0.88	0.66	1		
CORR	-0.04	0.19	0.33	0.32	-0.24	-0.17	0.83	0.53	0.90	1	
VA	-0.07	0.01	-0.08	0.09	-0.27	-0.11	0.31	0.49	0.44	0.32	1
POL	-0.02	0.44	0.23	0.26	-0.04	0.21	0.28	0.11	0.21	0.24	-0.26

Source: Calculated by authors

4.1. KAO Residual Cointegration Test

Panel data set is used to test cointegration, as time series data for shorter period suffer from the drawback of low power. Panel data techniques have a pooled level of regression which combines cross-section and time series data. Kao, (1999) residual cointegration test is used that has null hypothesis (H_0= there is no-co integration) and alternate hypothesis (H_1= there is co-integration among variables). Results of the test are shown in Table-4 that supports the presence of cointegration. Study used Vector Error Correction Model (VECM) for short run and long run analysis.

Table 3: Results of ADF and PP Tests for Stationarity

Stationarity Check For Variables	Type	ADF – Fisher Chi-Square		PP – Fisher Chi-Square	
		T Stat	*Prob.*	*T Stat*	*Prob.*
Control Of Corruption	Level	37.362	0.317	39.8136	0.227
	First Difference	81.149	0.000*	156.094	0.000*
Rule Of Law	Level	47.489	0.621	1.387	0.082**
	First Difference	95.476	0.000*	117.182	0.000*
Voice Accountability	Level	48.350	0.052	1.279	0.100
	First Difference	113.686	0.000*	139.628	0.000*
Political Stability	Level	52.133	0.024	47.278	0.064**
	First Difference	87.898	0.000*	136.177	0.000*
Regulatory Quality	Level	47.537	0.061	54.061	0.015
	First Difference	98.680	0.000*	172.544	0.000*
Government Stability	Level	39.634	0.233	45.383	0.091
	First Difference	91.925	0.000*	118.722	0.000*
Education	Level	45.545	0.126	41.173	0.185
	First Difference	67.422	0.000*	110.814	0.000*
Inflation	Level	33.964	0.0645	99.384	0.000*
	First Difference	132.317	0.000*	304.322	0.000*
Health	Level	5.897	1.000	4.490	1.00
	First Difference	80.939	0.000*	121.317	0.000*
Inclusive Growth	Level	27.4966	0.036	31.172	0.010
	First Difference	30.414	0.006*	73.490	0.000*
Trade Openness	Level	30.9066	0.6200	44.3700	0.109
	First Difference	76.488	0.000*	147.588	0.000*
GDP	Level	9.352	1.00	11.559	0.999
	First Difference	64.399	0.001*	103.083	0.000*

*,** show the level of significance at 5% and 10% respectively. Note that model strictly excludes variables that are not significant at 5 percent level for best results.

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Table 4: Results of KAO Residual Test Cointegration Test

H_0 = No co-integration H_1 = Co-integration	
ADF – T- Stat	P-value
-2.199634 **	0.099

** shows 10% level of significance and Lag length for residuals is chosen based on BIC.
Source: Estimated by the authors.

4.2. Vector Error Correction Estimation (VECM)

When there are more than one explanatory variable i.e. umbrella of institutions in this study, there may be more than one co integration vector. So, VECM was used to see short run and long run causality. Following Table-5 shows the results of Casualty relationships. The value of R-square shows the success of regression in predicting the impact of independent variables on dependent variable. The low R-square of IG, GOV & VA is particularly due to the nature of growth models. S.E of regression shows the magnitude of the residuals or the size of prediction error. Sum of square residuals are helpful in certain types of tests. Log likelihood ratio is the log likelihood function evaluated at the estimated values of the coefficients such as $\beta 1,\ldots n$.

Table 5: Results of Vector Error Correction Model VECM)

Vecm	D(IG)	D(LAW)	D(CORR)	D(GOV)	D(POL)	D(REG)	D(VA)
R-Squared	0.356	0.479	0.508	0.377	0.452	0.639	0.332
Sum Sq. Resids	657.83	0.294	0.312	0.314	2.160	0.324	0.574
S.E. Equation	4.161	0.088	0.091	0.091	0.238	0.092	0.123
F-Statistic	0.842	1.399	1.569	0.918	1.255	2.689	0.754
Log Likelihood	-165.4	81.427	79.550	79.371	17.628	78.371	60.031
Akaike AIC	5.980	-1.732	-1.673	-1.668	0.262	-1.637	-1.063
Schwarz SC	6.857	-0.855	-0.796	-0.791	1.139	-0.760	-0.186
Mean Dependent	-2.191	-0.012	-0.008	0.004	-0.019	0.005	-0.014
S.D. Dependent	4.028	0.095	0.100	0.089	0.250	0.119	0.117

Source: Estimated by the authors.

Significance and negative sign of error correction term report the existence of long run causality that runs from independent variable to dependent variable

and vice–a-versa. This also implies the speed of adjustment towards long run equilibrium. The results for long run relation of variables are given in Table-6.

Table: 6 Results for Long Run Causalities

Dependent Variables	Co-Efficient	Std. Error	T- Statistic	Probability
Inclusive Growth	-2.145	1.254	-1.70	0.095
Rule Of Law	-0.037	0.024	-1.50	0.138
Political Stability	0.078	0.068	1.14	0.257
Control Of Corruption	-0.090	0.024	-3.70	0.000
Government Effectiveness	-0.012	0.031	-0.62	0.534
Health Quality	-20.814	8.155	-2.55	0.014
Regulatory Quality	-0.022	0.024	-2.25	0.028
Trade Openness	-5.559	2.456	-2.292	0.0264

Source: Estimated by the authors.

Table-6 results indicate that long run causality runs from independent variables to inclusive growth, as shown by significance and negative sign of the co-efficient of inclusive growth (-2.15). The long run causality also exists for control of corruption (-0.09), health quality (-20.81), regulatory quality (-0.022) and trade openness (-5.559). Empirical results do not support for the presence of long run causality for the variables rule of law (-0.37), political stability (0.078) and government effectiveness (-0.012). These results support the previous studies' findings such as Anand, Mishra and Peris (2013), and Kunah and Mathew (2013).

Study also used Wald tests (VECM has used 2 lags by applying SC criteria) to look for SR causalities. Table-7 shows results generated from Wald Test for long run and short run. The null hypothesis of the test indicates that short run causality does not run from independent variables to dependent Variable. Results show that government effectiveness, Health, inflation, rule of law and political stability affects control of corruption in short run. However, education, GDP per capita, IG, trade openness, regulatory quality and voice accountability have no SR casualties. Moreover, there is a long run causality running from independent variables to control of corruption. This means that to control corruption, short run policies must be instituted through effective and good governance in order to increase health quality, decrease inflation, make rule of and ensure political stability. However, long run policies must be focused on all variables in order to curtail corruption. Results also depict that only controlling

inflation[9] from the mentioned variables can lead to government effectiveness in short run. The result elaborates the fact that only the inflation rate in the sample can show in short run that how much government is effective in its policies. The most fascinating result was acquired for Inclusive growth and political stability. No mentioned, determinants of IG can lead to inclusive growth and political stability in long run. This shows that Inclusive growth and political stability is a long run phenomenon.

Table: 7 Results and Summary of Short Run and Long Run Causalities [10]

Dep. Variables On X-axis and Ind. On Y Axis	Control of Corrupt.	Govt. Effect.	Inclusive Growth	Rule of Law	Political Stability	Regulat. Quality	Health Quality	Trade Open
Long Run Causalities	LR	.	LR	.	LR	LR	LR	LR
Control of Corruption	.	.	.	.	.	.	.	.
Education	.	.	.	.	.	.	.	.
GDP Per Cap	.	.	.	.	.	.	SR	SR
Government Effectiveness	SR	.	.	.	.	.	SR	SR
Health Quality	SR	.	.	.	.	.	.	.
IG	.	.	.	SR	.	SR	.	SR
Inflation	SR	SR	.	.	.	.	SR	.
Rule Of Law	SR	.	.	.	.	.	SR	.
Trade Open	.	.	.	.	.	.	.	.
Political Stability	SR	.	.	SR	.	SR	.	.
Regulations	.	.	.	SR	.	SR	.	.
Voice Accountability	.	.	.	SR	.	.	.	.

Source: Calculated by the authors.

However, inclusive growth does affect rule of law, regulatory quality and trade openness in short run. This reflects that if inclusive growth exists, it will benefit in improvement in trade openness, would lead to better regulatory quality and can ensure rule of law and order in a country. There appears to be a long run relationship for regulatory quality, health quality and trade openness. The results are comparable to R. Anand, J. Peris, (2013), who posits that education, trade openness and inflation has a significant role on growth in inclusive growth.

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[9] It may be noted that average rate of inflation in Pakistan has dropped down from 8.62% in 2014 to 2.79 % in 2016 in Pakistan. Similarly, reduction in inflation is seen for most of Asian countries, the reason being decline in petroleum prices. (For figures on Pakistan; see PES, 2015-16).

[10] For detailed results of SR (through Wald Test) and long run co-efficient see appendix.

4.3. Impulse Response Function Forecast

Following empirical results shown in Table-8 indicate that future policies can be drawn from employing Choleski decomposition on a VECM model with ordering: Government Stability, Rule of Law & Order, Political Stability and Absence of Violence, Regulatory Quality, Voice Accountability, Education, GDP Per Capita, and Openness on inclusive growth. Graphs of Impulse Response Function (IRF) forecasts are shown in Figure-1. Figure indicates that one standard deviation shock to the government stability shrinks the inclusive growth initially. The shock improves the conditions for three years or so. However, government stability amplifies to its previous value in about five years or more with a little fluctuation. The graph of response of IG to government stability reflects that government stability will facilitate to enhance the implementation of inclusive growth. This also depicts that government stability will positively affect inclusive growth in short run.

Table: 8 Impulse Response Function Forecast

Period	GOV	LAW	POL	REG	VOICE	EDU	GDP	OPENESS
1	0.63	0.00	0.00	0.00	0.00	0.78	-0.32	0.00
2	-0.31	0.36	0.67	-0.05	0.17	1.27	-1.23	-0.07
3	0.51	0.31	0.33	0.29	-0.51	1.39	-0.27	-0.17
4	0.34	0.36	-0.08	0.24	-0.48	1.17	-0.48	-0.22
5	0.56	0.44	-0.05	-0.17	-0.15	1.41	-0.01	-0.05

Source: Estimated by the author.

One standard deviation shock to the rule of law boosts inclusive growth for about five years or more with trivial fluctuations. This shows that rule of law will positively affect inclusive growth beyond short run. Thus, the impact of better law and order condition has much stable and a longer impact on inclusive growth. One standard deviation shock to the political stability enhances the inclusive growth initially for about two years. Latter, the impact of political stability and absence of violence dwindles to its preceding value about fourth year or more with noteworthy fluctuation. This shows that political stability will positively affect inclusive growth at initial and after wards would require another shock in about fourth year. There is dire need to follow continuous and consistent persistent policy to benefit for years to come. Thus, these forecasts predict that long run policies must be formulated to reap benefits of inclusive growth. This is possible if a shock to enhance political stability is generated after every two years or so, to achieve positive benefits on inclusive growth.
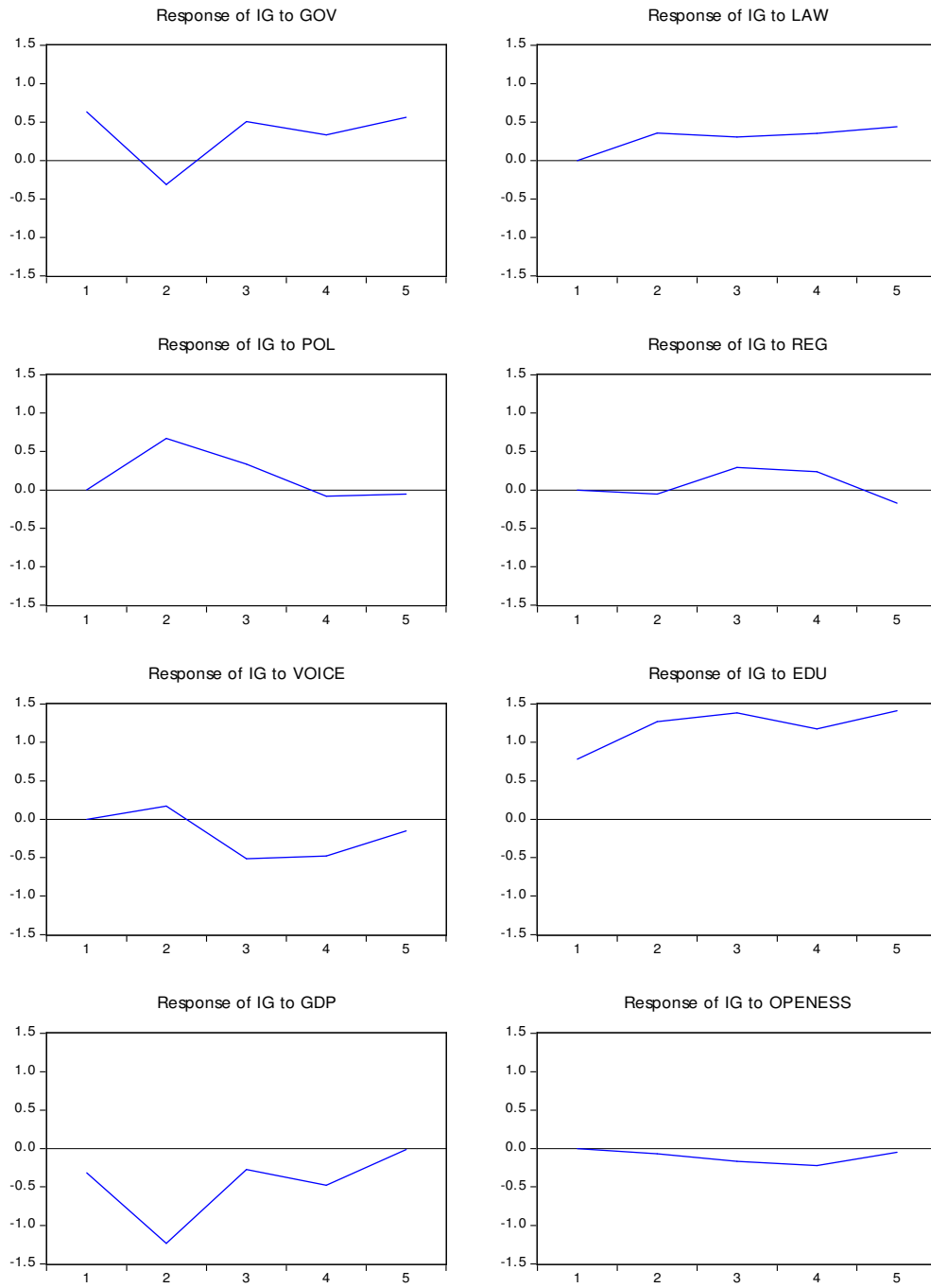
One standard deviation shock to the regulatory quality boosts up the inclusive growth for more than short run i.e. about five years or more with a little vacillation. This shows that regulatory quality will positively affect inclusive growth for years to come. A similar shock to the voice accountability increases the inclusive growth initially after two years and its' impact continues for further three years. Latter, impact of voice accountability decreases to its previous value with modest fluctuations. Shock of same magnitude of education enhances inclusive growth much more than any other dependent variable i.e. regulatory quality, political stability, GDP & openness of the economy etc. Inclusive growth reaches its maximum in about 3 years with an initial shock of improvement in education and then it continues up to 5 years, after the initial education shock to the inclusive growth. Shock to GDP per capita causes inclusive growth to its peak after three years to initial shock. Its impact continues thereafter, with some fluctuation. This reflects that policy must be focused on increasing GDP per capita with a significant change in a minimum of three years of time span. Of course, such positive shocks take some time to reap benefits and its fruits may be enjoyed for years to come.

Lastly, one standard deviation shock to trade openness causes inclusive growth to initially turn down for about four years and then it begin to positively influence inclusive growth for next year. It might take takes longer time to show its impact. It is general understood that openness has not contributed much in many developing countries due to their domestic nature of faulty microeconomic competition. However, it is imperative for policy makers to note that the impact of trade openness dies down shortly despite of its significance in improving inclusive growth. It is crucial to note that all the above findings have significant importance for formulating policies which can foster inclusive growth. No significant study, has contributed in this regard so far[11].

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[11] At least, related to the sample countries.

Figure 1
Response to Cholesky One S.D. Innovations

Response of IG to GOV

Response of IG to LAW

Response of IG to POL

Response of IG to REG

Response of IG to VOICE

Response of IG to EDU

Response of IG to GDP

Response of IG to OPENESS

35

5. Conclusions and Policy Implications

This article elaborates long run associations and no short term responses of education, health, trade openness, inflation, GDP per capita and umbrella of institutions to inclusive growth. The results from VECM depict mesmerizing results for achieving inclusive growth. All the determinants of inclusive growth can lead to inclusive growth in the long run. The study further suggests that persistent efforts are required to reap benefits of inclusive growth for short terms and then in long run. Thus, policies must be formulated, keeping in view all the above mentioned determinants of inclusive growth that would jointly escort inclusive growth.

There appears to be a long run relationship for regulatory quality, health quality, control of corruption and trade openness. On the other hand, GDP per capita and government effectiveness significantly affects health in short-run. Inflation and rule of law also plays a momentous role in improving health quality; both in LR and SR. The immediate and longer impacts are due to concentration on education, GDP and rule of law. Lastly, this study also forecasts how shocks to diverse variables in models can lead to inclusive growth within a time period of five years, by employing IRF. Both short run and long run policies for achieving IG require consistent efforts to bestow fruits of public policy to masses, which is the ultimate goal of public policies i.e. human welfare. In this respect, it is important to note that without the presence of strong institutional structure, IG is not feasible to attain. Further research on the broad spectrum of IG will help to provide sounder base to formulate and implement welfare policies; like efficient management of micro credit which must reach to the neglected segment of the poor society.

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World Development Indicators (website: http://data.worldbank.org/indicator)

Appendix
Table 1:   Poverty-Income Inequality Comparisons[12]

Poverty headcount ratio at $1.90 a day (% of population)			Gini Index (World Bank estimate)		
Countries	1990s	2000s	Change	1990s	2000s	Change
China	32	12	-20	43	42	-1
Indonesia	23	16	-7	30	36	6
Malaysia	5	0.28	-4.72	45	46	1
Thailand	3	0.06	-2.94	42	40	-2
Pakistan	28	8.3	-19.7	30	30	0
India	38	22	-16	33	34	1
Bangladesh	60	34	-26	33	31	-2
Bhutan	25	3	-22	69	39	-30
Iran	3	0.1	-2.6	38	37	-1
Jordan	2	0.1	-1.9	36	34	-2
Kazakhstan	10	3	-7	36	26	-10
Kyrgyzstan	42	6.16	-35.84	31	27	-4
Cambodia	32	2	-30	35	30	-5
Srilanka	9	14	5	40	39	-1
Philippines	19	14	-5	46	44	-2
Tajikistan	31	5	-26	33	38	5
Veitnam	39	4	-35	37	39	2
All	23.5	8.4	-15.1	38.64	36	-2.6

Source: Calculated By Authors, Using Data from WDI.
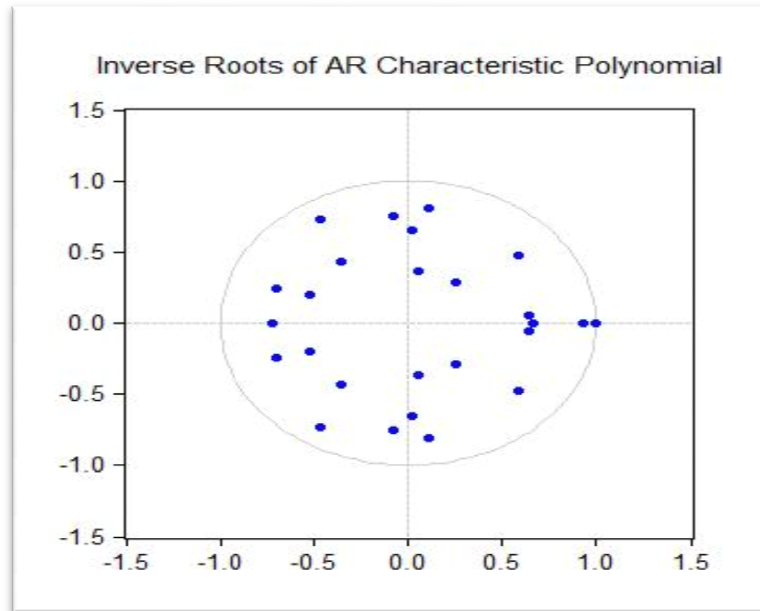
Table 2: Serial Correlation Test

Lags	LM- Stat	Probability
1	148.398	0.383
2	179.024	0.225

Probability from Chi-square with 144 df.
Source: Estimated by the authors.

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[12] Negative sign shows a positive situation as negative growth of poverty and inequality are desired and Vice a versa.

Figure 1.VECM Stability Test

Source: Estimated by the authors.

Table 3: Residual Correlation Doornik-Hansen Test

Component	Skewness	Chi-sq	df	Prob.
1	-0.06588	0.055321	1	0.8140
2	0.256485	0.820543	1	0.3650
3	-0.2794	0.969632	1	0.3248
4	0.304149	1.143348	1	0.2849
5	0.067401	0.057907	1	0.8098
6	0.293640	1.067977	1	0.3014
7	0.097016	0.119762	1	0.7293
8	-0.35837	1.568389	1	0.2104
9	-0.36974	1.664880	1	0.1969
10	-0.25986	0.841785	1	0.3589
11	-0.18142	0.415290	1	0.5193
12	-0.60045	4.100933	1	0.0429
Joint		12.82577	12	0.3818

Source: Estimated by the authors.