

INCLUSIVE GROWTH ASSESSMENT AND THE MACROECONOMIC DETERMINANTS IN PAKISTAN: AN EMPIRICAL ANALYSIS

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Abstract

This paper analyses the inclusive growth in Pakistan. The studies has been divided into two stages. In the first stage, the inclusive growth of Pakistan for the year 1980 to 2019 was calculated by using the methodology developed by Asian Development Bank which combines Economic Growth, Employment, Education, Health, Infrastructure, Poverty and Inequality into a single index. In the second stage, impact of some macroeconomic variables on inclusive growth was calculated. The results showed that on average, Pakistan was at satisfactory position in terms of inclusive growth. Inclusive growth was the highest in 1983, and was the lowest in 1999, 2001 and 2002. The low inclusive growth was because of low GDP growth and high level of poverty level in those years. The IG has been positively affected by GDP growth, decrease in poverty ratio, rise government expenditure on health and increase infrastructure, while have negative correlation with poverty and inequality. The long-run autoregressive distributed lag (ARDL) model reveals that the Consumer Price Index, Domestic Credit to Private sector, foreign remittances, Gross domestic savings (% of GDP), and General government final consumption expenditure (% of GDP) significantly and positively affect inclusive growth. Conversely, Trade openness have a negative and significant relationship, indicating that a 1 percent increase in trade decreases inclusive growth by 2.8%.

Keywords: Inclusive Growth, Pakistan, Macroeconomic, ARDL

1. INTRODUCTION

Inclusive growth (IG) is a concept that improves the social opportunities of economic partner during the process of economic growth, which benefits every segment of society. However, its definition includes direct links between the determinants of microeconomic, macroeconomic and economic growth. Economic growth is described as an increase in the output of goods and services over a given period. To be most precise, the calculation must be free of inflationary effects. Businesses earn more as the economy grows which increases stock prices. This allows businesses to spend and recruit more workers. Incomes grow as more jobs are generated. Consumers have more money to spend on other goods and services. Higher economic growth is fueled by purchases. As a result, all countries strive for sustainable economic development. In the dimensions of microeconomics, IG embodies the importance of economic diversification and structural

change of competitiveness, while macroeconomic dimensions refer to changes in the macro economy such as overall factor productivity along with aggregate factor's inputs, Gross Domestic Product (GDP) or Gross National Product (GNP) of a country. All such factors are the requirement for sustainable economic growth and indirectly IG is the key requirement for sustainable economic growth. However, in developing countries sometimes maintaining it, is difficult as economic growth leads to negative externalities such as an increased ratio of corruption. Besides, the negative externalities, the IG takes a long-term view as productive employment focuses on increasing the income of the poor and enhancing their standard of living (Thangmuanlal, 2017).

The Organization for Economic Cooperation and Development (OECD) defined inclusive growth as a growth that is distributed fairly across society and creates opportunities for all. IG creates opportunities for all segments of the population and distributes prosperity in economic societies, both economically and financially (Antle and Ray, 2020). However, the perspective of United Nations Development Programs (UNDP) towards IG is based on outcome and process which means that the benefits of such process will be equally distributed amongst the participators and decision makers (Aggarwal et al., 2019).

Growth promotes long-term viability through investment. The energy shift will require a strong investment climate, which is bolstered by economic development, which boosts consumer confidence, spending, and demand. Moreover, as demonstrated by researchers on outperforming developing economies, the capital deepening that emerges from increased investment stimulates productivity, wages, and growth. Increased inclusivity and sustainability stimulate economic growth through increased demand and investment opportunities. New business prospects were generated by sustainability in fields such as clean technologies (Mckinsey, 2021).

2. LITERATURE REVIEW

The notion of inclusive growth was soon adopted in development literature and policymaking, becoming a near-universal need in any debate about improving living circumstances in poor countries (Corrado, & Corrado, (2017). There are a few key characteristics that might assist to imagine how to go ahead in defining the idea's meaning. To commence, inclusive growth is closely tied to pro-poor growth, especially in terms of its relative definition, which states that pro-poor growth requires the reduction of both poverty and inequality (Lopez et al., 2004 and Bennett 2002). Although certain inclusive growth concepts are compatible with actual pro-poor growth, most people understand that the goal of inclusive development is to reduce poverty and inequality. There is no consensus on what the link between poverty reduction and a decrease in inequality should be, or if a certain pace of change should be attained (Abakumova & Primierova, 2018). Inclusive growth, accordingly, is growth that eliminates the disadvantages of the most disadvantaged while benefiting everyone, while pro-poor growth may occur either without benefits to one or more groups or at the cost of one or more groups (Schoneveld, 2020). In terms of process, inclusive growth may be defined as the expansion of chances for involvement, which may encompass both involvements

in productive economic activity and having a voice in how the development process is directed. The latter has gotten little attention so far, while the former has been increasingly associated with the idea of productive employment. The discussion on inclusive growth has also been defined by the inclusion of factors other than income (Mader, 2018). It has been claimed that inclusive growth refers to the distribution of income gains while inclusive development refers to gains in dimensions other than, the operationalization of inclusive growth definitions has often included multiple variables other than income gains (McKinley, 2010). Indeed, because of its widespread use, inclusive growth has come to be regarded as growth that supports development, with development defined as complete gains in numerous dimensions that include both living circumstances and empowerment. This means that growth in these areas counts as inclusive growth (Hampton *et al.*, 2018).

3. MATERIALS AND METHODS

3.1 Developing an Inclusive Growth Index:

The present study will adopt a two-dimensional methodology: In the first part an Inclusive Growth Index (IGI) will be developed that relies on key indicators to decide relative performance over different periods. In the second phase, a brief empirical analysis will be carried out to check the impact of different macroeconomic indicators on growth inclusiveness for the period 1995-2019. Many steps are involved to develop IGI, however, this study brought the methodology developed by Asian Development Bank (ADB) to build IGI (Khan *et al.*, 2016).

In the first step to build IGI, selection of dimension and indicator will be required e.g. Evaluation of dimension is $V = \{v_1, v_2, v_3, \dots, v_n\}$

Evaluation area collection is $V = \{v_{j1}, v_{j2}, v_{j3}, \dots, v_{jn}\}$

Evaluation index collection is $V = \{v_{j11}, v_{j21}, v_{j31}, \dots, v_{jim}\}$

where “j” refers to evaluation dimension,

I is the evaluation area and m is the evaluation indicator.

In the second step, weight will be assigned to each indicator based on importance and its reflection.

“W” will be assumed as weight then $W = \{w_1, w_2, w_3, \dots, w_j\}$.

After giving weights to each indicator, the univariate standards will be carried out to form R-matrix i.e.

$VR = \{r_{111}, r_{112}, r_{113}, \dots, r_{11m}\}$.

After forming the R-matrix sum weights will be assigned to IGI as

$$IGI = \sum_{i=1}^m \left(\sum_{j=1}^n v_{R \times w_j} \right) \times w_i$$

Where V_R = Univariate standardization, w_i is the weight assigned to single indicator and W_j is weight assigned to each dimension.

The value of 100 have been assigned to IGI and a closer IGI to 100 represent higher the degree of integration in indexation. The degree of integration in indexation may be range, positive and negative. Further, the IGI indexation is divided in three groups for better presentation i.e. value of IGI fall in 01-30 shows substandard progress of inclusiveness, indexation score from 31-70 represent standardized whereas the value of IGI from 71 and above characterized superior inclusiveness. Formula for indexation has been given as:

$$U_{tj} = \frac{X_{tj}}{Z_{tj}} \times 100$$

Where

U_{tj} = score of j index for time t

X_{tj} = actual value of j index

Z_{tj} = value of j index

Asian Development Bank (ADB) (2007), carried out the most comprehensive way which assigned weights to different components and indicators based on their contribution for measuring IG. These weights of the indicators were also used by other researchers for measuring the growth and development based on IG (Khan et al., 2016; & McKinly, 2010). These weights are assigned based on the role that the individual dimension plays in growth and development (Hansen, 2010). ADB have assigned highest weights to those indicators which have their direct effect on economic, income and employment opportunities. The broad dimensions of IG are four: (1) economic growth, employment opportunities and infrastructure, which was assigned weight of 40 percent (2) Access to basic facilities, having 25 percent weightage (3) Poverty and Inequality was assigned 20 percent weightage and (4) Environment with 15 percent weightage. The 40 percent weightage assigned to the first pillar of IG was further divided in a way that 50 percent was accorded to economic growth, 25 percent to employment and 25 percent to infrastructure. Similarly, 25 percent weight given to the second pillar of IG i.e. access to basic facilities was further distributed into education and health access in 60 and 40 percentages, respectively. Likewise, the assigned weight of 20 percent to the third pillar i.e. poverty and inequality of IG has further distribution of 50 percent to each poverty and inequality while the last pillar of IG was environment with 15 percent weight. The whole discussed weighted scheme and further sub-distribution of these indicators and their weights are shown in the table given below:

Table 1: Weightage Scheme of Different Indicators For Inclusive Growth Index

Dimension Index		Area Index		Indicators	
Indicators	Weight	Indicators	Weight	Indicators	Weight
Economic Growth, Employment opportunities, Infrastructure (V ₁)	40%	Economic Growth (V ₁₁) Employment (V ₁₂) Infrastructure (V ₁₃)	20% 10% 10%	GDP per capita growth rate (V ₁₁₁)	8%
				Industrial share in GDP (V ₁₁₂)	6%
				Agriculture share in GDP (V ₁₁₃)	6%
				Employment in industrial sector (V ₁₂₁)	5%
				Employment in services sector (V ₁₂₂)	5%
Length of Roads in Km (V ₁₃₁)	10%				
Access to basic facilities (V ₂)	25%	Education (V ₂₁) Health (V ₂₂)	15% 10%	Female to male primary enrolment ratio (V ₂₁₁)	8%
				Female to male employment ratio (V ₂₁₂)	7%
				Total Expenditure (V ₂₂₁)	10%
Poverty & Inequality (V ₃)	20%	Poverty (V ₃₁) Inequality (V ₃₂)	10% 10%	Head count ratio at national level (V ₃₁₁)	10%
				GINI Coefficient Index (V ₃₂₁)	10%
Environment (V ₄)	15%	Environmental protection (V ₄₁)	15%	Area under Forests (V ₄₁₁)	15%

Table 2: Variables Description and Data Source

Dimension Index Indicators	Area index Indicators	Indicators	Unit	Source
Economic Growth	Economic Growth	GDP per capita growth rate Industrial share to GDP Agriculture share to GDP	%age	GoP
Employment opportunities	Employment	Employment in industrial sector Employment in services sector	Number	WDI
Infrastructure	Infrastructure	Length of Roads in Km (Annual increase in length of roads in Km)	Km	GoP
Access to basic facilities	Education	Female to male primary enrolment ratio Female to male employment ratio	%age	GoP
	Health	Total Expenditure on health	Bn	GoP
Poverty & Inequality	Poverty Inequality	Head count ratio GINI Coefficient Index	% age	GoP WIID
Environment	Environmental protection	Area under Forests	Hectares	WDI

3.2 Appropriate Model

After building the IGI, the next step of the study was to analyze inflation rate, Trade Openness and domestic credit to private sector and check the empirical and significant relationship with growth inclusiveness in Pakistan using time series data during 1995-2019. The functional form of model will be as:

$IGI = f$ (Inflation Rate, Trade Openness, Domestic Credit to Private Sector, Remittances, Saving Percent of GDP, Government Expenditure)

Mathematical transformation of the above Inclusive Growth Index function is given as:

$$IGI = \alpha + \beta X_i + \varepsilon_i \quad 3.1$$

$$IGI = \alpha + \beta_1 I.R + \beta_2 T.O + \beta_3 DC.PS + \beta_4 Remit + \beta_5 S.GDP + \beta_6 G.E + \varepsilon_i \quad 3.2$$

Where:

I.R indicates the inflation Rate depend upon the consumer price index, T.O Represents trade Openness, DC.PS represents Domestic Credit to Private Sector, Remit represents foreign remittances, S.GDP represents Saving percent of GDP and G.E represents Government Consumption Expenditure.

Table 3: Variables and Data Source

Variable	Data Source
CPI (Consumer Price Index)	World Development Indicators
Trade Openness (% of GDP)	Pakistan Economic Survey
Domestic credit to Private Sector (% of GDP)	State bank of Pakistan
Gross Domestic Savings (% of GDP)	World Development Indicators
inclusive Growth (IG)	Author's Calculation
Foreign Remittances (% of GDP)	Pakistan Economic Survey
General government final consumption expenditure (% of GDP)	World Development Indicators

4. RESULTS AND DISCUSSION

In constructing the Inclusive Growth Index, the Asian Development Bank (ADB) assigned weights to different components and indicators based on their contribution in the inclusive growth. The calculated inclusive growth for the year 1980 to 2019 is as under:

Table 4: Inclusive Growth Index for the Year 1980-2019

Year	Inclusive growth Index	Year	Inclusive growth Index
1980	50.00	2001	30.20
1981	42.76	2002	29.91
1982	45.50	2003	34.09
1983	71.32	2004	33.19
1984	46.78	2005	32.38
1985	54.94	2006	33.57
1986	58.48	2007	37.35
1987	61.43	2008	37.12
1988	65.11	2009	35.89
1989	62.54	2010	35.58
1990	58.84	2011	46.27
1991	61.24	2012	39.20
1992	52.93	2013	32.71
1993	44.61	2014	31.11
1994	49.49	2015	35.26
1995	52.50	2016	37.69

Year	Inclusive growth Index	Year	Inclusive growth Index
1996	55.31	2017	38.46
1997	49.14	2018	38.81
1998	40.80	2019	36.51
1999	24.35		
2000	40.94		

The result shows that the inclusive growth was the lowest during the year 1999. It was due to low GDP growth, high poverty ratio, and decrease in infrastructure in that year. Inclusive Growth was the highest in the year 1983, the main reason for highest inclusive growth was the high increase in infrastructure in that year. The results show that GDP growth, Poverty ratio, government expenditure on health and change in the length of roads (Used as a proxy for infrastructure) have the maximum effect on inclusive growth.

Starting from the 1980s, the table shows that inclusive growth was only 50 percent during that year, although economic growth was more than 6 percent accompanied by a 26.5 percent industrial share in GDP during 1980. This was because of high poverty headcount, i.e. (31 percent) during 1980. The inclusive growth rises to 71 percent during 1983, although there was a 32 percent poverty headcount ratio, this was because of the high increase in infrastructure in that year. It means that an increase in infrastructure has a high effect on inclusive growth. Inclusive growth is consistently high from the year 1987 to 1991. This was because of high GDP growth, and high government expenditure on the health sector accompanied by low poverty in these years. In 1993 poverty was low but due to less increase in infrastructure and negative GDP growth, the inclusive growth remained low. In 1999 the inclusive was at the lowest level, the reason was that there was low GDP growth and a decrease in the infrastructure in that year.

In the year 2001, inclusive growth was at the edge of a satisfactory level but in 2002 again it was below the satisfactory level. There were several reasons i.e. high poverty with low GDP growth, low infrastructure, less government expenditure on health as well as low agriculture share in GDP in the year 2002. From 2003 till 2019, the inclusive growth was in a satisfactory position. Although GDP growth and infrastructure growth were negative during 2008-2010 and 2019, but inclusive growth was still at a satisfactory level. The main reason for the satisfactory inclusive growth was that poverty was the lowest along with low inequality and the forest rent increased in that years.

4.1 Descriptive Analysis

Descriptive analysis is often the first step in data analysis and is used to gain a preliminary understanding of the data before moving on to more complex statistical analysis techniques such as inferential analysis. Descriptive statistics helps data reliability decisions in a better direction. An instant look of the values of mean and standard derivation helps in normality of variables. If the standard deviation value is near to the half value of mean it leads to the normality of such variable. However, if the standard deviation value is more than its mean value then transformation i.e. log transformation, square root transformation, or ratio with dependent variable etc. is necessary for normality of such variable. In the table No. 5, the median values of all indicators are close to their respective

means, indicating that the distribution of data is fairly symmetric. The minimum and maximum values provide information about the range of data for each indicator which indicates normality of the data.

Table 5: Descriptive Analysis

	IGI	CPI	DCP	Remittances	Trade	Saving % GDP	G. Exp:
Mean	44.108	08.123	22.896	05.012	33.351	11.762	11.100
Median	40.869	07.768	24.098	04.940	33.515	12.072	10.758
Maximum	71.317	20.286	29.786	08.656	38.909	17.399	16.784
Minimum	24.347	02.529	15.386	01.310	25.306	05.375	07.346
Std. Dev.	11.438	03.802	03.947	02.135	03.296	03.781	02.115
Observations	40	40	40	40	40	40	40

Source: Calculated based on the data taken from: World Development Indicators, Pakistan Economic Survey, State bank of Pakistan, World Income Inequality Database.

4.2 Econometric Analysis

Now in the next section impact of different economic indicators on the Inclusive growth will be discussed in detail. Before proceeding further, it is important to check the stationarity in the data. Unit Root test is used to check the stationarity of the data.

4.2.1 Unit Root Test

Unit root analysis is considered as backbone of time series data because most of time the time series data was found stationary. A time series is stationary if a change in time does not result in a change in the shape of the distribution. To check stationarity from time series data, the Augmented Dickey Fuller (ADF) an extended version Dickey Fuller is used. The ADF tests estimates stationarity or the integration order of each series for further estimation. In the present study, the ADF technique has been carried out for unit root analysis. After running a unit root test, the next step is to determine what type of test to use based on the results of the unit root test.

Table 6 (a): Unit Root Analysis at Level I (0)

		CPI	DCP	IGI	Remit	Trade	Saving	Expend:
With Constant	t-Statistic	-4.7253	-1.6517	-2.3532	-2.3183	-2.3291	-1.4423	-1.4513
	Prob.	0.0006	0.4470	0.1613	0.1730	0.1683	0.5517	0.5473
		***	no	No	No	No	No	No
With Constant & Trend	t-Statistic	-4.7456	-3.1637	-3.5209	-1.9520	-2.9321	-1.7937	-1.8145
	Prob.	0.0030	0.1074	0.0510	0.6050	0.1640	0.6885	0.6785
		***	no	*	No	No	No	No
Without Constant & Trend	t-Statistic	-1.2338	-0.6459	-0.8086	-0.8271	-0.6345	-0.5411	-0.1537
	Prob.	0.1958	0.4310	0.3592	0.3512	0.4360	0.4762	0.6242
		no	no	No	No	No	No	No

Notes:

Null Hypothesis: the variable has a unit root

a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not

Significant
 b: Lag Length based on AIC
 c: Probability based on MacKinnon (1996) one-sided p-values.

Source: *Calculated based on the data taken from: World Development Indicators, Pakistan Economic Survey, State bank of Pakistan*

Table 6(a) indicates that the variables have been found stationary at different orders. The consumer price index (CPI) found highly significant with constant, with constant along with trend and insignificant with no constant and trend meaning that CPI has been used for analysis at level I(0) as the definition of unit root allow such case. The probability value of Inclusive Growth Index (IGI) with constant & trend was found significant whereas the rest i.e. with constant and without constant & trend were found insignificant. The remaining variables i.e. Domestic Credit to Private sector (DCP), Government expenditure, government savings, Remittances and trade were found insignificant meaning that such variables give the misleading and spurious results if they used at level I(0). To deal with such problem, the data was treated at difference i.e. I(1).

Table 6 (b): Unit Root Analysis at Difference I (1)

		<i>d(CPI)</i>	<i>d(DCP)</i>	<i>d(IGI)</i>	<i>d(Remit)</i>	<i>d(Trade)</i>	<i>d(Saving)</i>	<i>d(Expend:)</i>
With Constant	t-Statistic	-4.3550	-5.1995	-9.0111	-1.2254	-7.4632	-7.1046	-5.0058
	Prob.	0.0019	0.0001	0.0000	0.6511	0.0000	0.0000	0.0002
		***	***	***	n0	***	***	***
With Constant & Trend	t-Statistic	-4.2481	-5.1598	-8.8968	-3.8967	-7.3613	-7.4754	-4.9543
	Prob.	0.0115	0.0008	0.0000	0.0235	0.0000	0.0000	0.0000
		**	***	***	**	***	***	***
Without Constant & Trend	t-Statistic	-4.4575	-5.2416	-0.1275	-1.2751	-7.5333	-7.1901	-5.0744
	Prob.	0.0001	0.0000	0.0000	0.1821	0.0000	0.0000	0.0000
		***	***	***	n0	***	***	***

Source: *Calculated based on the data taken from: World Development Indicators, Pakistan Economic Survey, State bank of Pakistan*

Differencing is the ultimate solution to make it stationary for regression analysis. First differences of CPI, DCP, IGI and Trade were found highly significant at first difference however probability value of remittances with constant and trend was found insignificant at 5 percent. Further, the table 6(b) reveal stationary series which indicate that these variables were integrated of order one, i.e., I(1). However, this solution is not ideal because after difference the variables of the model do not provide distinctive long run equilibrium results. Co-integration then becomes an overriding condition for any macroeconomic model using non-stationary time series data. The foundation work on long-run equilibrium or cointegration among time series data has been done by Granger (1981) then expanded by Engle and Granger (1987), Yoo and Engle (1987), Phillips (1986) and Johansen (1988, 1991 and 1995), stated that problem of unit root among time series variables are explained by cointegration. Cointegration gives combined framework of short-run and long-run association between variables.

4.3 ARDL Co-Integration

Cointegration shows a long run relation between explanatory and exploratory variables of a model. However, in the present studies the unit root results shows the mixture of stationarity at level $I(0)$ and first difference $I(1)$. Therefore, we have used Auto Regressive Distributive Lag (ARDL) co-integration method.

4.3.1 ARDL Bound Test (Uses and advantages)

Pesaran et al. (2001) were the first to develop the ARDL bound Approach for determining whether or not two variables are cointegrated. One of the advantages of using this technique is that because it permits explanatory variables having mixed orders of integration, $I(0)$ or $I(1)$, which standard test of cointegration would not accept. Yet, there is a possibility to fall into degenerated conditions of non-cointegration if one uses the ARDL bound test.

Table 7: ARDL BOUND TEST

Test Statistic	Value	Signif.	Lower bound $I(0)$	Upper bound $I(1)$
			Asymptotic: n=1000	
F-statistic	7.481641	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: *Calculated based on the data taken from: World Development Indicators, Pakistan Economic Survey, State Bank of Pakistan*

Table No. 7 indicates the ARDL bound test results. It is convinced that if F-statistic value is greater than the upper bound value at 5%, we reject the null hypothesis and accept the alternate hypothesis. This should cause towards the long run relation among independent and dependent variables. In table No. 7 the values of F-statistic is higher than the upper bound value at 1% level of significance which is 3.99. It is concluded the occurrence of long term co-integration amongst independent and dependent variables.

Table 8: Long Run Co-Integration Test

Variables	Coefficient	t-statistics	Probability Value
CPI	3.164296	3.172224	0.0053
DCP	2.140137	4.471673	0.0003
REMIT	7.925174	2.827922	0.0111
TRADE	-2.834273	-2.643775	0.0165
SAVING	4.365966	2.438972	0.0253
EXPEND:	4.099349	4.190445	0.0005

Source: *Calculations based on the data taken from: World Development Indicators, Pakistan Economic Survey, State Bank of Pakistan*

Table No. 8 depicts the long run co-integration test results. All the variables are discussed one by one in details as follows.

4.4 Consumer Price Index (CPI):

The CPI probability value is 0.05% shows that CPI is positively significant. Therefore, the coefficient value of CPI i.e. 3.16 shows that if we increase the CPI by 1 % it will increase the Inclusive growth (IG) by 3.16 % in the long run. According to Mundell-Tobin Effect, the increase in capital accumulation in terms of inflation cause by interest rate increase economic growth (Sattarov, 2011). Trend analysis of inflation and economic growth amongst some counties has confirmed the hypothesis that low inflation is necessary condition but not the sufficient for economic growth (Svigir and Milos, 2017). According to Mallik and Chowdhury (2001) there is direct relationship exists between the variables in question i.e., CPI and growth in long run in south Asian countries. The same results also presented by Mubarik & Riazuddin (2005). On other hand (Khan et al., 2016) found that Inflation and inclusiveness have a negative relationship; higher inflation was linked to poorer poverty reduction, lower average welfare growth, and a negative contribution to distributional effects.

4.5 Domestic Credit to Private Sector (DCP):

The probability value i.e., 0.003 % of Domestic Credit to Private sector (DCP) is also positively significant. Therefore, the coefficient value of DCP i.e., 2.14 shows that if we increase the DCP by 1 % it will increase the Inclusive growth (IG) by 2.14% in the long run as Asif et al. (2020) stated the similar results. Hsieh and Klenow (2009), Ogundipe et al. (2016), Kazeem, (2021), Bwigane (2013), (Khan et al., 2020) aslo presented the same results. The authors summarized that domestic credit stimulates economic activity by distributing funds through financial agents such as banks to families and enterprises for personal consumption and investment. This is an important part of an economy because it makes it more productive, which reduces unemployment and poverty (Begum & Aziz, 2019) and helps the financial sector and stimulates the inclusive growth (King & Levine 1993; Abu-Badar, et al., 2005 and Shendre, et al., 2004).

4.6 Foreign Remittances

Probability value of the foreign remittances was positive, which shows that foreign remittances were positively significant. The coefficient value of foreign remittances i.e. 7.9 shows that if we increase the foreign remittances by 1 % it will increase the Inclusive growth (IG) by 7.9 % in long-run. The empirical results obtained from the studies of Jamshaid (2016) confirmed that the overseas remittances were a significant source of long-term and short-term sustainable economic development. The same results were presented by (Ogede 2019). However, there is a counter-argument that remittances may have negative impact on production in recipient nations. For example, Chami et al. (2005); Iqbal & Sattar, (2010) and Jahjah (2003) discovered a negative effect of remittances on economic development using panel data from 113 nations. They contended that remittances were compensating and countercyclical and that there were major barriers to converting remittances into productive investments.

4.7 Trade

The trade variable shows a negative significance at 1% of the probability value. The coefficient value shows that if we increase trade by 1% it will lead to a decrease in IG by 2.8%. The same results were presented by (Fosu and Mold, 2008; Winters et al. 2002; Winters et al. 2004; Krueger and Berg 2003; Jongwanch, 2007; Anyanwu et al., 2013; Aagah and Baydono, 2018; Muwau, 2019 and Shahzad & Chaudhary, 2020) who stated that empirical data showed that inclusive growth is severely impacted by trade openness in poor nations. Their analysis predicts that the total effect on alleviating poverty will be minimal, if not negative and therefore it will cause poverty. Trade liberalization may exacerbate income inequality by promoting the adoption of technology changes that are skill-biased in response to increasing global competitiveness. Thus, despite its overall favorable economic impacts, it is possible that trade liberalization is not beneficial for poverty reduction if it significantly worsens the income distribution, especially by making the poor poorer.

4.8 Gross Domestic Savings (% of GDP)

The probability value i.e., 2 % of Gross Domestic Savings (% of GDP) denoted by saving percent of GDP in the table No. 8 is also positively significant. Therefore, the coefficient value of gross domestic saving i.e., 2.14 shows that if we increase the saving by 1 %, it will increase the Inclusive growth (IG) by 2.14% in the long run. Amponsah (2021) discovered that increasing domestic savings as a source of resource mobilization to boost domestic investment, reduces income disparities and promotes inclusive growth. In the words of Barro (2000), saving more promotes equitable growth. Amponsah, (2021) found that an increase in a country's domestic savings was determined by the desired level of national savings as a source of resource mobilization to enhance domestic investment, and it tends to minimize income disparity and mobilize inclusive growth. Their findings also suggest that increasing savings has a favorable and large influence on inclusive growth. But savings may exacerbate income gap and impede investment and inclusive growth without wealth transfer, as observed by Barro (2000).

4.9 General Government Final Consumption Expenditure (% of GDP):

The probability of the General Government Final Consumption Expenditure (% of GDP) denoted by expenditure in the table no. 8 is also positively significant. Which shows that a 1% increase in the General Government Final Consumption Expenditure (% of GDP) will increase the inclusive growth by 4 percent in the long run. Bibi et al. (2021) indicated that there is a favorable and considerable effect of government spending on Pakistan's long-term inclusive growth. The authors found that public spending has a positive impact on Pakistan's economic progress. Long-term inclusive growth rises 0.30 % for every 1% increase in government spending. Estrada et al. (2014) found that public investment on education and health care reduces inequality better than taxation. They discovered that government expenditure redistributed income in better way. The authors also concluded that health and education investment reduces economic inequality.

Table 9: Short Run Dynamics

Variable	Coefficient	Standard Error	t-Statistic	Probability
D(CPI)	0.692873	0.234414	2.955760	0.0085
D(DCP)	0.831580	0.379066	2.193762	0.0416
D(TRADE)	0.158897	0.342053	0.464540	0.6478
D(SAVING % GDP)	2.396337	0.390886	6.130519	0.0000
D(EXPEND:)	1.211174	0.757347	1.599234	0.1272
CointEq(-1)*	-0.546847	0.059978	-9.117530	0.0000

Source: Calculated based on the data taken from: World Development Indicators, Pakistan Economic Survey, State bank of Pakistan

Table No. 9 depicts the short run dynamics results. The Consumer Price Index (CPI) has a favorable and considerable influence on inclusive growth. In the short run, a 1% rise in inflation accelerates inclusive growth by 0.69% in a year. The probability value i.e. 4% of Domestic Credit to Private sector (DCP) significant. Which shows that a 1% increase in the DCP leads to 0.83% increase in the IG. The probability value of trade was insignificant in the short run. Domestic saving percent of GDP was also significant showing that a 1% increase in Domestic Saving percent of GDP will increase by 2.3 percent in the short-run. The government expenditure value was also insignificant in short-run.

It is evident that the value of Error Correction Coefficient (ECM) must be significant and having negative coefficient value. Therefore, in current study the probability value of ECM is highly significant and having negative coefficient. The value of coefficient i.e. -0.54 indicated that the economy will converge from disequilibrium to equilibrium .54% in a year. Therefore, it is concluded that the economy will converge to equilibrium approximately in 2 years in short run.

5. FINDINGS AND RECOMMENDATIONS

The primary objective of this research was to measure inclusive growth adopting the methodology developed by Asian Development Bank that merges, employment, growth, infrastructure, accessibility and environment to a single index. The annual time series data from 1980-2019 for Pakistan was used to measure inclusive growth adopting scores and weights for every indicator of the inclusive growth. The Inclusive Growth Index for Pakistan showed that Pakistan was in satisfactory range in terms of inclusive growth.

The third objective of the study was to find out the impact of selected macroeconomic indicators on inclusive growth of Pakistan. We used consumer price index (CPI), trade openness, domestic credit to private sector, foreign remittances, saving percent of GDP and government expenditure in explaining growth inclusiveness. The long run ARDL results showed that relationship of inclusive growth with Consumer Price Index (CPI) was positively significance. The inflation rate increases the nominal interest rate will cause more investment opportunities and more capital accumulated. Domestic Credit to Private sector (DCP) was also positively significant with the inclusive growth. The probability

value foreign remittances was positive, which shows that foreign remittances was positively significant. The overseas remittances were a significant source of long-term and short-term sustainable economic development because, the overseas remittances exacerbated wealth distribution in Pakistan thus contributing in growth inclusiveness. More over remittances were directed toward improved economic consumption and investment. Trade variable shows the negatively significance. Trade liberalization could make income inequality worse if it makes people more likely to adopt skill-biased changes to technology in order to keep up with increasing global competition. So, despite its overall favorable economic impacts, If trade liberalization changes the way people's incomes were distributed enough, especially by making the poor poorer, it may not help reduce poverty after all. Gross domestic savings (% of GDP) denoted by saving percent of GDP was also positively significant. An increase in a country's domestic savings is determined by the desired level of national savings as a source of resource mobilization to enhance domestic investment, and it tends to minimize income disparity and mobilize inclusive growth. The probability of the General government final consumption expenditure (% of GDP) was also positively significant. Which shows that a 1% increase in the government final consumption expenditure (% of GDP) will increase the inclusive growth by 4 percent in the long run.

5.1 Recommendations

On the basis of the present studies, the following policy recommendations for inclusive growth are suggested.

- The government can encourage domestic savings for inclusive growth through financial education, tax incentives, and accessible savings choices because gross domestic savings and inclusive growth have a favourable link. Further enhancing the effect of gross domestic savings on inclusive growth is the implementation of consumer protection laws and the promotion of employer-sponsored saving programmes. Campaigns to promote national savings awareness can also help to promote a culture of saving and emphasize the advantages for both individuals and the economy.
- Foreign remittances contribute to inclusive growth in a favourable way. Governments should therefore make investments to upgrade the remittance-related services and infrastructure. This entails making sure that remittance transfer mechanisms are functional and economical, lowering transaction costs, and improving the transparency and security of remittance channels. Such actions can lessen reliance on unofficial remittance networks and enhance the quantity of remittances flowing through regular channels.
- The study results showed that trade have negative relation with inclusive growth in Pakistan. This is because of export of primary products of Pakistan. In order to make balance of payment favorable, Pakistan should promote research and innovations in industrial sector to promote their trade. Trade policies should be thoroughly evaluated to make sure they help domestic companies, encourage healthy

competition, don't negatively affect any poor groups, and don't expand the wealth gap. Trade openness is regarded as a growth-promoting approach in the context of globalization.

- Domestic credit to private sector has positive relationship with IG. Therefore it is suggested that government should use domestic credit to private sector as a financial development instrument to promote inclusive growth.

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