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Dynamics of Pro-Poor Growth: An Analysis of Distributional Pattern of Growth in Pakistan (2007-2018)

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Abstract:

The study investigates the interconnection between economic growth, inequality, and poverty in Pakistan, focusing on pro-poor growth. Among other measures of pro-poor growth, study estimated "poverty equivalent growth rate" to quantify the distributional pattern of growth in Pakistan by using the HIES (Household Integrated Economic Survey) data, from 2007-08 to 2018-19 at national, regional and provincial levels. This is the only measure that adheres to most important axiom of monotonicity for reducing poverty; it evaluates both the magnitude of growth and the extent to which the impoverished population benefits from it. It is found that distributional pattern of growth is heterogeneous during different sub periods in Pakistan Generally, the poorer among the poor are getting less distributional benefits of growth throughout the period considered. To tackle this skewed distribution of growth, it is crucial to allocate sufficient public funds to lagging regions, especially in rural areas of Pakistan. Adequate measures should also be implemented to establish permanent social safety nets

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capable of safeguarding Pakistan's most vulnerable populations from economic downturns and catastrophic events.

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KEYWORDS: Inequality; Economic Growth; Poverty;

1. Introduction:

One of the main objectives of Pakistan's development policy is poverty reduction. While poverty statistics have shown a significant decline over the years, there still exists a significant disparity between the poor and non-poor populations in Pakistan, both national and at subnational levels. The economic growth in Pakistan has been inconsistent, with rates ranging from 5% in 2007-2008 to 3.7% in 2010-2011 and 3.6% in 2012-2013, less than other South Asian contemporaries (GOP, 2013) .Significant inequalities existed in Pakistan, which not only hindered the rate of growth but also its ability to alleviate poverty. Rural poverty is nearly double urban poverty, with regional and provincial variations (Arif and Shujaat, 2014). If the poor in Pakistan remain confines to regions and sectors that are excluded from the growth process, even rapid per capita growth will be ineffective in alleviating poverty, particularly in reducing regional disparities.

According to the Human Development Index (HDI), Pakistan is ranked 154th out of 189 countries (UNDP, 2020). This ranking suggests that the country's economic growth has not effectively benefited society, as the HDI considers factors such as education and health in addition to economic indicators. Pakistan has the lowest education spending as a percentage of GDP in South Asia (UNESCO, 2020). Pakistan spends 2.6% of GDP on health, compared to India's 4.7%, Sri Lanka's 3.5%, the Philippines' 4.7%, and Vietnam's 7.1% (WDI, 2016). Factors such as low investment in human capital, skewed farm asset distribution, disparities in resource allocation, sectoral wage gaps, favouring urban manufacturing sector and employment limitations impact growth distribution and the persistence of inequalities in Pakistan (Chaudhry et al., 2012).

The focus of economic growth should be on enhancing the well-being of all segments of society, rather than solely concentrating on the overall economy (Stiglitz, 2007). Ravallion and Chen (2003) assert that when economic growth is coupled with rising inequality, efforts to reduce poverty are hampered because only a small portion of the population benefits. Pro-poor growth, integrating equity and efficiency, aims to ensure that underprivileged

individuals benefit at least proportionally from economic growth. Pro-poor growth is not a choice, but a necessity in Pakistan where economic growth primarily benefits a privileged few. This study explores the impact of economic growth on poverty and income inequality by using the notion of pro-poor growth. Pro-poor growth evaluates the distributional benefits of growth among the poor and non-poor segment of the society while identifying any inequalities that may arise during the distributional process of growth. Specifically, the study enquires to what extent the growth in Pakistan is pro-poor at national, regional and provincial levels from 2007-08 to 2018-19.

1. Literature Review:

2.1. Theoretical Review:

The conceptual foundations of pro-poor growth find their origins in Ahluwalia and Chenery's influential publication, "Redistribution with Growth," released by the World Bank in 1974. This influential piece asserts that alleviating poverty in developing nations requires concurrent income redistribution from the affluent to the underprivileged, coupled with economic growth. This proposition represents a logical divergence from the trickle-down hypothesis, marking the initiation of comprehensive discussions on pro-poor policies. The concept of "broad-based growth," first introduced in 1990 in the annual report of World Development, indirectly alludes to pro-poor growth. The explicit term "pro-poor growth" emerges in the late 1990s, signifying a phenomenon that had not been formally defined before.

It has been critical to measure and characterise pro-poor growth. Pro-poor growth is defined as an income distribution shift that disproportionately benefits the poor, implying that it reduces poverty more than uniform growth in income (Kakwani and Pernia, 2000). Simply put, the lower strata of society's income increases faster than that of the middle or upper class.

Pro-poor growth is defined as economic expansion that is beneficial to the poor, providing opportunities to improve their financial situation (UN, 2000). Nonetheless, this description is insufficient and does not provide specific guidance on measuring or implementing pro-poor growth policies. Several recent studies have attempted to conceptualise and quantify various indicators of pro-poor growth.

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Ravallion and Chen (2003) assert that whenever poverty decreases, the poor and disadvantaged benefit from growth. The amount of poverty reduction is not specified in this definition. According to McCulloch Baulch (2000) and Kakwani and Pernia (2000), pro-poor growth refers to economic growth that benefits the poor and gives them an advantage over non-poor people. This definition includes poverty and inequality reduction.

Furthermore, pro-poor growth is divided into absolute versus relative approaches. According to the relative approach, as growth increases, poverty and inequality decrease. According to the absolute definition, the lower class receives more absolute benefits than those in the upper tier of the income distribution, resulting in a decrease in absolute inequality over time.

Pro-poor growth can also be characterized by either a partial approach or a full approach. The partial method of measuring pro-poor growth categorizes economic growth as either beneficial or detrimental to the poor, without considering a particular poverty indicator or the poverty line (Kakwani and Son, 2003). This method, defined in Ravallion and Chen's (2003) study, based on first-order dominance conditions, employs curves to determine the distributional pattern of growth. Son's (2003) index employs stochastic dominance curves to determine whether a growth process is pro-poor. The partial approach has the advantage of adaptability to any indicator or poverty line. However, it has the limitation that it cannot determine whether a growth process is pro-poor if the dominance conditions are not met, and it does not assess the degree to which it is pro-poor.

The full approach implies that pro-poor growth index must meet the monotonicity criterion, i.e., it should be a monotonically increasing function of poverty reduction (Kakwani and Son, 2003).Only a measure that satisfies the monotonicity criterion along with maximizing economic growth is the one that abides by both necessary and sufficient conditions for poverty reduction. This approach necessitates the need to specify poverty line and poverty measure, which requires precision and making value judgement.

The Poverty Bias of Growth, a measure proposed by McCulloch and Boulch (2000) does not abide by the monotonicity criterion. Similarly, the Pro-poor growth measure, introduced by Ravallion and Chen (2003) also does not fulfil the axiom of monotonicity as it only considers the poverty rate at the beginning of the period and does not take into account the poverty at the end of period. Kakwani and Pernia introduced another famous measure of pro-poor growth know as Pro-poor growth index (PPGI). It elucidates the correlation between overall and relative poverty alleviation within a growth scenario that is impartial in distribution. This

relationship is represented by the poverty elasticity ratio. If the ratio exceeds one, it indicates growth that is favourable to the poor. Like other measures discussed above, PPGI also does not full fill the condition of monotonicity.

Kakwani and Son (2008) recommended a measure of pro-poor growth "the poverty equivalent growth rate (PEGR)" that encompasses both the growth in average income and its distributional aspect. It further meets the criterion of monotonicity. It is one of the most effective measures to evaluate the reduction in poverty, and maximizing PEGR implies maximum reduction in poverty.

1.2. Empirical Review:

The dynamics of pro-poor growth is influenced by country-specific factors such as economic structure, educational systems, and policy frameworks. While cross-country analyses are prevalent in the literature, delving into country-specific studies provides nuanced insights for policymakers aiming to foster sustainable and equitable growth.

Son and Kakwani (2006) conducted a study covering 80 countries and 237 growth periods spanning from 1984 to 2001. Their findings suggested that a notable portion of these growth spells exhibited anti-poor tendencies, highlighting intricacies in the correlation between economic growth and poverty. Geda et al. (2009) explored patterns of growth, inequality, and poverty in Ethiopia, highlighting the reliance of dynamics among them on various structural elements. Duclos and Verdier-Chouchane (2011) investigated South Africa and Mauritius, noting increased inequality in South Africa but pro-poor growth in Mauritius.

After analysing the growth pattern in China between 1990 and 1999, Ravallion and Chen (2003) found that the average income growth rate of 6% stood below the growth rate (10%) of the wealthiest percentile but exceeded the growth rate (3%) of the poorest percentile. In a study focusing on Indian states, Ravallion and Datt (2002) argued for a more pronounced effect of pro-poor growth in urban areas than rural areas. Fan et al. (2008) emphasized the importance of enhancing agricultural productivity in rural India for realizing pro-poor growth. Warr (2006) highlighted the direct correlation between the growth of the agricultural and service sectors and the reduction of poverty in Southeast Asian nations.

Kang and Imai (2012) found disproportionate poverty concentration in minority groups in Vietnam. Despite this, poverty reduction rates were higher among minorities, highlighting the

complex impact of growth on different ethnic groups. Lin (2003) explored China's experience from 1985 to 2001, noting that while economic growth significantly reduced poverty, it concurrently exacerbated income inequality, challenging anti-poverty effort.

Omer and Jafri (2008) calculated national income growth rates for lower income-deciles in Pakistan with Growth Incidence Curves (GIC) by using only the measure of headcount incidence(P_0). The measure of headcount incidence is popular among researchers and policymakers but violates a number of important axioms, including the monotonicity axiom, thus serve as a rough indicator of pro-poor growth. Cheema and Sial (2012) conducted an extensive study at the national level, estimating various poverty measures but lacked sub-national granularity. Jamal (2014) approached pro-poor growth from both relative and absolute perspectives at the national level.

This research extends the empirical analysis in Pakistan from 2007-08 to 2018-19, examining distributional pattern of growth at the national, regional, and provincial levels. Employing three poverty indexes; headcount incidence (P_0), poverty gap ratio(P_1), and squared poverty gap (P_2), the study aims to provide insights for a region-specific policy framework, contributing to sustainable development in Pakistan.

2. Methodology

3.1. Data:

The data is collected from the Household Income and Expenditure Survey (HIES) spanning the years 2007-08, 2010-11, 2011-12, 2013-14, 2015-16, and 2018-19.

3.2 Methodology for the Estimation of Poverty Levels:

Poverty estimation comprises of three key steps: the formulation of a relevant welfare indicator, the determination of a poverty line, and the selection of a suitable poverty index.

3.2.1. Well Being Indicator:

When evaluating poverty in the context of monetary resources, two predominant approaches exist: utilizing income or consumption as metrics for assessing household well-being.

In developing nations, accurately measuring income poses difficulties due to a significant proportion originating from self-employment in informal sectors. In contrast, expenditure is generally more accessible to quantify. In Pakistan, aggregate household consumption expenditure serves as a proxy for measuring living standards. However, before being employed in poverty estimations, aggregate household consumption expenditure necessitates three essential adjustments.

The initial step entails selecting items for constructing consumption aggregates, summing up costs of regularly consumed items, including those purchased, self-produced, received as assistance, or obtained as gifts. Excluded are expenditures on durable goods, fines, property, and house taxes.

Secondly, precise assessment of individual welfare in households, accounting for variations in size and composition (Deaton and Zaidi, 2002), necessitates adjusting consumption expenditure accordingly. To ensure comparability, this study employs the basic adult equivalence scale for poverty estimations, assigning individuals under 18 a weight of 0.8 and those aged 18 and above a weight of 1 (World Bank, 2003).

The third step entails adjusting for spatial and temporal variations in the cost of living when computing aggregate consumption expenditure from survey data. The study utilizes the Paache price index at the primary sampling unit (PSU) level, derived from median unit prices in household surveys, to eliminate price disparities across urban, rural areas, and provinces, and throughout the year.

Poverty Line:

This study employs poverty lines estimated by the Planning Commission of Pakistan for respective survey years to ensure standardization and comparability with other studies. In Pakistan, between 1990 and 2011-12, the poverty line was calculated using the Food Energy Intake approach, which emphasized nutritional deficiencies. However, starting in 2013-14, the Planning Commission shifted to the Cost of Basic Need (CBN) method, setting the poverty line at Rs 3030.32 per adult equivalent per month for that period. Adjusted for CPI-based inflation, the poverty line increased to Rs 3250.28 and Rs 3776 per adult equivalent per month for 2015-16 and 2018-19 respectively. The CBN-based poverty lines for earlier survey years, adjusted by CPI, are presented in Table 1.

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Table 1: CBN poverty Lines From 2007-08 to 2018-19

Year	Poverty Line (Rs Per Adult Equivalent per month)
2007-08	1543.51
2010-11	2333.35
2011-12	2600.15
2013-14	3030.32
2015-16	3250.28
2018-19	3776.60

Source: Federal Bureau of Statistics

2.2.2. The FGT Class of Poverty Indices:

Numerous alternative measures for poverty are available, yet this study focuses on three prominent measures for calculating poverty levels in Pakistan: headcount incidence (P_0), poverty gap index (P_1), and squared poverty gap index (P_2). These measures fall within the category of additive poverty indices. The Foster, Greer, and Thorbecke (FGT) class of poverty indices serves as a widely recognized generalization of these indices, expressed by the following formula

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{n}(\frac{Gap_i}{z})^{\propto} \ , (\alpha \ \geq 0)$$

When the parameter α= 0, the index corresponds to the headcount index, which violates the Pigou-Dalton principle and does not strictly adhere to the monotonicity principle. When α = 1, it is denoted as the poverty gap index, respecting the monotonicity principle but not strictly adhering to the Pigou-Dalton principle. When α = 2, the index is known as squared poverty gap. Each of these measures captures different aspects and severity of consumption poverty. The headcount ratio is a more practical metric for implementing policies that aim to lift those closest to the poverty line out of poverty. The poverty gap index and squared poverty gap, on the other hand, prioritise assistance for those who are most impoverished and farthest from the poverty line. These three measures can also be broken down and analysed for specific regions or areas, such as cities and rural regions.

Methodology for the Estimation of Inequality:

This research estimates consumption inequality in Pakistan through the computation of the Gini index. The Gini index, a widely employed index for measuring inequality utilizing the Lorenz curve approach, can alternatively be calculated by using the following formula

$$G = \frac{n+1}{n-1} - \frac{2}{n(n-1)\mu}\sum_{i=1}^{n} \gamma_i \, y_i$$

In the x-distribution, γ_i represents an individual's rank, starting with the wealthiest ranked first. The value of Gini Coefficient varies from 0 to 1, 0 implies uniform income distribution, while 1 indicates complete income concentration in a single individual. A higher Gini Coefficient signifies increased income inequality.

2.3. Measuring Growth:

Economic growth is quantified by computing spatially adjusted mean household consumption expenditure based on household surveys (HIES).

2.4. Operationalization of Distributional Pattern of Growth:

Kakwani and Son (2008) introduced the Poverty Equivalent Growth Rate (PEGR), a metric that considers both overall economic growth and its distribution across income groups while satisfying the monotonicity criterion. Maximising PEGR value, rather than overall growth rate, is critical for effective poverty reduction (Kakwani et al., 2003).

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A PEGR higher than the average income or consumption growth rate indicates that economic growth benefits the poor. Anti-poor growth, on the other hand, is indicated by a lower PEGR when compared to the average growth rate, implying that changes in income distribution have a negative effect on the poor.

The PEGR, which ranges from zero to the average income growth rate, suggests a "trickle-down" scenario in which poverty falls while the poor receive less benefit from growth. The difference between the PEGR and the average income growth rate reflects developments or losses caused by changes in income distribution. Exceeding the PEGR benchmark indicates that growth has a positive influence on income distribution among the poor. In contrast, a lower PEGR indicates that growth increases inequality, which harms the poorer population.

Kakwani and Son (2003) introduced the Poverty Equivalent Growth Rate (PEGR), given as under:

$$\gamma^* = \left(\frac{\eta}{\eta_g}\right)\gamma = \phi\gamma$$

Here,

In the given equation, a growth scenario is pro-poor if the Poverty Equivalent Growth Rate (γ^*) surpasses the actual growth rate (γ)and anti-poor if (γ^*) *is* smaller than (γ). When $0 < \gamma^* < \gamma$, initial inequality increases during growth, but poverty continues to decline, reflecting a "trickle-down" scenario where the poor benefit relatively less than the non-poor.

During economic recessions with negative growth rates, poverty tends to rise. If, however, a significant reduction in inequality occurs during the recession, resulting in a lower poverty rate, the positive Poverty Equivalent Growth Rate designates the recession as "strongly pro-poor." If the Poverty Equivalent Growth Rate exceeds the actual growth rate while both remain negative, the recession is "pro-poor," indicating a relative positive impact on the poor compared to the non-poor. Conversely, if the poverty equivalent growth rate is lower than the actual growth rate, and both are negative, the recession is "anti-poor," signifying increased poverty with a disproportionate burden on the poor.

3.5.1 Methodology to Estimate Poverty Equivalent Growth Rate:

The additive class of poverty measure θ is entirely defined by the poverty benchmark z, the average income/consumption μ, and the Lorenz curve $L\ (p)$ as follows:

$$\theta = P[z, \mu, L(\rho)]$$

Given average income/consumption μ_1 and μ_2 in the initial and final years, respectively, and their corresponding Lorenz curves as $L_1(\rho)$ and $L_2(\rho)$ respectively. Poverty elasticity is estimated by

$$\hat{\vartheta} = (Ln\ [\theta(z, \mu_{2,} L_2(\rho)] - Ln[\theta(z, \mu_1, L_1(\rho)])/\hat{\tau}$$

$$\hat{\tau} = Ln(\mu_2) - Ln(\mu_1\ ) \text{..... (Growth rate of average consumption)}$$

The estimation of the PEGR is provided by

$$\hat{\tau}^* = \left(\frac{\hat{\vartheta}}{\hat{\eta}}\right)\hat{\tau}$$

Here $\hat{\eta}$ represents an estimation of elasticity of poverty with respect to growth.

$$\hat{\vartheta} = \hat{\eta} + \hat{\sigma}$$

Here $\hat{\sigma}$ denotes an estimation of the inequality component of poverty reduction. Decomposition methodology of Kakwani (2000) is employed to compute $\hat{\eta}$ and $\hat{\sigma}$ using the formulas given as.

$$\hat{\eta}=\frac{1}{2}[\ln\ (\theta\left(z, \mu_{2,} L_1(\rho)\right) - \ln\ (\theta\ (z, \mu_1,\ L_1(\rho)) + \ln\ (\theta(z,\mu_2,L(\rho)) - \ln\ (\theta(z, \mu_{1,} L_2(\rho)]/\hat{\tau}$$

$$\hat{\sigma}=\frac{1}{2}[ln\theta(z, \mu_{1,}\ L_2(\rho) - \ln\ (\theta(z, \mu_1, L_1(\rho)) + \ln\ (\theta(z, \mu_2, L_2(\rho)) - \ln\ (\theta(z, \mu_2, L_1(\rho))]/\hat{\tau}$$

The proportional reduction in poverty, denoted by $\widehat{\vartheta}\,\hat{\tau}$, equals $\hat{\eta}\,\hat{\tau}^*$. Since $\hat{\eta}$ is consistently negative (unless $\mu_1 = \mu_2$), the extent of poverty reduction would increase monotonically

increasing function of $\hat{\tau}^*$ .The greater the $\hat{\tau}^*$, the higher the percentage decrease in poverty between the two periods. Consequently, maximizing $\hat{\tau}^*$ would equate to maximizing the percentage decrease in poverty.

2.5. Findings & Discussion:

Poverty Equivalent Growth Rate is estimated by using the software of Distributive Analysis of STATA Package (17) at national and subnational levels in Pakistan Table 1 depicts that during 2007-08 to 2010-11, in Pakistan there is pro-poor growth at the national, regional, and provincial levels, specifically concerning the head count incidence measure (P_0) but if the depth and intensity of poverty is considered growth is not benefitting the people who are ultra-poor or more deprived among the people below the poverty line. This indicates that growth during this period was anti-poor for individuals situated away from the poverty line, particularly those classified as ultra-poor.

Table 1: Distribution of Growth (Period:2007-08 to 2010-11)

	P_0	P_1	P_2
National			
Actual Growth Rate	0.577***	0.577***	0.577***
Poverty Equivalent Growth Rate	0.645**	0.463**	0.456**
Urban			
Actual Growth Rate	0.485***	0.485***	0.484***
Poverty Equivalent Growth Rate	0.532***	0.407***	0.394***
Rural			
Actual Growth Rate	0.642***	0.641***	0.641***
Poverty Equivalent Growth Rate	0.702***	0.494***	0.495***
Punjab			
Actual Growth Rate	0.614***	0.614***	0.614***
Poverty Equivalent Growth Rate	0.668***	0.491***	0.484***
Sindh			
Actual Growth Rate	0.498**	0.498**	0.498**
Poverty Equivalent Growth Rate	0.602**	0.421**	0.407**
KPK			
Actual Growth Rate	0.525***	0.525***	0.525***
Poverty Equivalent Growth Rate	0.63***	0.406***	0.397***
Balochistan			
Actual Growth Rate	0.727**	0.727**	0.727**
Poverty Equivalent Growth Rate	0.83*	0.5712*	0.588*

Source: Authors Calculation using HIES survey (2007-08, 2010-11)
Note: ***,**and* means statistically significance at 1%, 5% and 10% respectively.

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During 2010-11 to 2011-12, growth was pro-poor for the head count incidence measure (P_0), at the national, regional, and provincial levels in Punjab and KPK. In Sindh and Balochistan, there is a rise in inequality during periods of growth, accompanied by a simultaneous decrease in poverty—a phenomenon indicative of a trickle-down effect emphasizing the fact that poor gain less from growth.

For the poverty gap index (P_1) and squared poverty gap(P_2), distributional pattern of growth favours the poor segment of population at the national and regional levels. At the provincial level, growth in the favour of poor was observed only in Punjab contrasting with the other three provinces (Sindh, KPK, and Baluchistan).

Source: Authors Calculation using HIES survey (2010-11, 2011-12)

Table 2: Distribution of Growth (Period:2010-11 to 2011-12)

	P_0	P_1	P_2
National			
Actual Growth Rate	0.093***	0.093***	0.093***
Poverty Equivalent Growth Rate	0.102***	0.096***	0.094**
Urban			
Actual Growth Rate	0.127**	0.127**	0.127**
Poverty Equivalent Growth Rate	0.136**	0.131**	0.127**
Rural			
Actual Growth Rate	0.068***	0.068***	0.068***
Poverty Equivalent Growth Rate	0.0826***	0.083***	0.082***
Punjab			
Actual Growth Rate	0.080***	0.080***	0.080***
Poverty Equivalent Growth Rate	0.101***	0.097***	0.096***
Sindh			
Actual Growth Rate	0.113***	0.113***	0.113***
Poverty Equivalent Growth Rate	0.099***	0.098***	0.095***
KPK			
Actual Growth Rate	0.099***	0.099***	0.099***
Poverty Equivalent Growth Rate	0.103**	0.096**	0.0951**
Balochistan			
Actual Growth Rate	0.085**	0.085**	0.085**
Poverty Equivalent Growth Rate	0.043**	0.0568**	0.0624**

Note: *** and ** means statistically significance at 1% and 5% respectively.

The reason for this can be attributed, in part, to the adverse impact of heavy rains and floods in Sindh and the northern sections of Baluchistan, leading to significant losses in rural communities' infrastructure, livelihoods, and agriculture (GOP, 2012).

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During 2011-12 to 2013-14, all poverty measures (P_0, P_1, and P_2) in Pakistan displayed an anti-poor growth trend at national, regional, and provincial levels. Even though initial inequality increases during the growth process, while poverty still declines—a scenario resembling a trickle-down process, where the poor benefit proportionally less than the non-poor.

Table 3: Distribution of Growth (Period:2011-12 to 2013-14)

	P_0	P_1	P_2
National			
Actual Growth Rate	0.438***	0.438***	0.438***
Poverty Equivalent Growth Rate	0.294***	0.255***	0.239***
Urban			
Actual Growth Rate	0.596***	0.596***	0.596***
Poverty Equivalent Growth Rate	0.356***	0.229***	0.081***
Rural			
Actual Growth Rate	0.324***	0.324***	0.324***
Poverty Equivalent Growth Rate	0.272**	0.234**	0.212**
Punjab			
Actual Growth Rate	0.66***	0.662***	0.662***
Poverty Equivalent Growth Rate	0.500**	0.471***	0.455***
Sindh			
Actual Growth Rate	0.199***	0.199***	0.199***
Poverty Equivalent Growth Rate	0.164***	0.145***	0.144***
KPK			
Actual Growth Rate	0.614***	0.614***	0.614***
Poverty Equivalent Growth Rate	0.453***	0.045***	0.437***
Balochistan			
Actual Growth Rate	0.304***	0.304***	0.304***
Poverty Equivalent Growth Rate	0.203***	0.098***	0.043***

Source: Authors Calculation using HIES survey (2011-12, 2013-14).
Note: Note: *** and ** means statistically significance at 1% and 5% respectively.

Notably, the exacerbation of inequality and anti-poor growth during this period was attributed to record power and gas outages, along with additional internal and external challenges in Pakistan in 2012-13. Fixed investment dropped to 10.9% of GDP, marking the lowest share since 1974 and the lowest among major Asian countries. The agriculture sector experienced negative growth of 3.3% in 2012-13, influenced by unpredictable weather patterns, water scarcity, input costs, and traditional farming methods. High food costs posed challenges to reducing inequality, particularly in rural areas, where they constitute a substantial portion of poor people's overall spending and negatively impact poor households' purchasing power.

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During 2013-14 to 2015-16, growth is pro-poor at national, regional and provincial level, for all the poverty indices, except in the province of Sindh. In Sindh the growth is not pro-poor for the poor who are near the poverty line and also for the poor who are away the poverty line.

Table 4: Distribution of Growth (Period:2013-14 to 2015-16)

	P_0	P_1	P_2
National			
Actual Growth Rate	0.054***	0.054***	0.054***
Poverty Equivalent Growth Rate	0.150***	0.128***	0.120***
Urban			
Actual Growth Rate	0.033***	0.033***	0.0033***
Poverty Equivalent Growth Rate	0.253**	0.206**	0.178**
Rural			
Actual Growth Rate	0.089***	0.089***	0.089***
Poverty Equivalent Growth Rate	0.128***	0.105***	0.097***
Punjab			
Actual Growth Rate	0.079**	0.079**	0.079**
Poverty Equivalent Growth Rate	0.084***	0.081***	0.080***
Sindh			
Actual Growth Rate	0.292***	0.292***	0.292***
Poverty Equivalent Growth Rate	0.175***	0.148***	0.140***
KPK			
Actual Growth Rate	0.120***	0.120***	0.120***
Poverty Equivalent Growth Rate	0.128**	0.125***	0.121***
Balochistan			
Actual Growth Rate	0.135***	0.135***	0.135***
Poverty Equivalent Growth Rate	0.239***	0.207***	0.192***

Source: Authors Calculation using HIES survey (2013-14, 2015-16)
Note: Note: *** and ** means statistically significance at 1% and 5% respectively.

During 2015-16 to 2018-19, growth is pro-poor in Pakistan at national, rural and urban level for all the poverty measures. At provincial level, growth is pro-poor for Punjab, Sindh and Baluchistan for all the poverty indices.

In the Province of KPK growth process is pro-poor only for people who are close to the poverty line. However for ultra-poor growth is anti-poor.

Table 5: Distribution of Growth (Period:2015-16 to 2018-19)

	P_0	P_1	P_2
National			
Actual Growth Rate	0.09***	0.090***	0.090***
Poverty Equivalent Growth Rate	0.184***	0.154***	0.142***
Urban			
Actual Growth Rate	0.032**	0.032**	0.032**
Poverty Equivalent Growth Rate	0.158**	0.119**	0.110**
Rural			
Actual Growth Rate	0.141***	0.141***	0.141***
Poverty Equivalent Growth Rate	0.195**	0.177**	0.168**
Punjab			
Actual Growth Rate	0.168***	0.168***	0.168***
Poverty Equivalent Growth Rate	0.229**	0.203**	0.192**
Sindh			
Actual Growth Rate	0.047***	0.047***	0.047***
Poverty Equivalent Growth Rate	0.271**	0.161**	0.136**
KPK			
Actual Growth Rate	0.115***	0.115***	0.115***
Poverty Equivalent Growth Rate	0.126***	0.1092***	0.105***
Balochistan			
Actual Growth Rate	0.099***	0.099***	0.099***
Poverty Equivalent Growth Rate	0.171**	0.163**	0.149**

Source: Authors Calculation using HIES survey (2015-16, 2018-19)
Note: Note: *** and ** means statistically significance at 1% and 5% respectively.

From 2007-08 to 2018-19 i.e. during the whole decade, distributional pattern of growth in Pakistan favour the poor at national, regional and provincial level only when the measure of headcount incidence (P_0) is considered.

In contrast, for P_1 and P_2, growth was pro-poor solely in urban areas, with no pro-poor trend observed at the national level, in rural regions, and across all four provinces.

Table 6: Distribution of Growth (Period:2007-08 to 2018-19)

	P_0	P_1	P_2
National			
Actual Growth Rate	1.85***	1.85***	1.85***
Poverty Equivalent Growth Rate	2.058***	1.848***	1.840***
Urban			
Actual Growth Rate	1.7507***	1.7507***	1.7507***
Poverty Equivalent Growth Rate	1.898***	1.755***	1.746***
Rural			
Actual Growth Rate	1.888***	1.888***	1.888***

Poverty Equivalent Growth Rate	2.113**	1.880**	1.875**
	Punjab		
Actual Growth Rate	2.054***	2.054***	2.054***
Poverty Equivalent Growth Rate	2.260***	2.060***	2.048***
	Sindh		
Actual Growth Rate	1.709***	1.709***	1.709***
Poverty Equivalent Growth Rate	1.988***	1.705***	1.696***
	KPK		
Actual Growth Rate	1.935***	1.935***	1.935***
Poverty Equivalent Growth Rate	1.994***	1.916***	1.923***
	Balochistan		
Actual Growth Rate	2.053***	2.053***	2.053***
Poverty Equivalent Growth Rate	2.270***	2.023***	2.031***

Source: Authors Calculation using HIES survey (2007-08, 2018-19)
Note: Note: *** and ** means statistically significance at 1% and 5% respectively.

This implies that the growth process did not benefit individuals farther from the poverty line or those facing challenges in sustaining their daily livelihood.

It is critical to observe that throughout the whole period of 2007-2008 to 2018-19, and during all the sub periods, there is a trend that Poverty equivalent growth rate gets lower as the rank of poverty measures increases, this implies that poorer among the poor are getting less distributional benefits of growth.

3.6. Conclusion & Policy Implications:

From 2007-08 to 2010-11, growth in Pakistan was pro-poor at the national, regional, and provincial levels for P_0, but not for P_1 and P_2. During 2010-11 to 2011-12, national growth was pro-poor for all poverty indicators, while provincial growth was pro-poor only in Punjab and anti-poor in other provinces. During 2011-12 to 2013-14, growth is anti-poor at the national, regional and in all four Provinces for all the poverty measures. During 2013-14 to 2015-16, poverty equivalent growth rate is greater than the actual growth rate indicating that growth is pro-poor at national, regional and provincial level, for all the poverty measures P_0, P_1 and P_2, except in the province of Sindh. During 2015-16 to 2018-19, growth is pro-poor in Pakistan at national, rural and urban level for all the poverty measures. At provincial level, growth is pro-poor for Punjab, Sindh and Baluchistan for all the poverty measures i.e. P_0, P_1 and P_2. In the Province of KPK growth process is pro-poor only for people who are close to the poverty line. However for ultra-poor growth is not pro-poor or anti-poor. Overall, from

2007-08 to 2018-19 the Poverty Equivalent Growth Rate for headcount incidence (P_0) exceeded the actual growth rate, indicating pro-poorness when headcount incidence is considered. However, for P_1 and P_2 , pro-poorness was observed only at the urban level, with non-pro-poor trends at the national level, in rural areas, and across all provinces for the ultra-poor.

If the poor in Pakistan remain confines to regions and sectors that are excluded from the growth process, even rapid per capita growth will be ineffective in alleviating poverty, particularly in reducing regional disparities. To address the issue of the distributional pattern of growth, adequate public funds must be invested in lagging regions and districts, and particularly in rural regions.

Appropriate measures should be taken for permanent social safety nets, capable of protecting Pakistan's most vulnerable populations from economic downturns and catastrophic events.

Achieving the Sustainable Development Goals requires sustained and high levels of growth, specifically with a targeted pro-poor pattern, in Pakistan.

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