COMMENTARY

THE GROWTH – INEQUALITY – POVERTY NEXUS IN PAKISTAN

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Abstract

The growth, inequality and poverty relationship has been of a variable nature in Pakistan. This enables quantification of the impact of different factors on the level of inequality and incidence of poverty. Based on this quantification, it is estimated that there has been a very big increase in the incidence of poverty in Pakistan in 2022-23.

The growth-inequality-poverty nexus has been extensively studied in the literature, including by Ravallion (2001), Kwasi (2015), Adams (2004), Fosu (2010) and Sharrocks and Hoeven (2004). The principal finding is the variable nature of this relationship. At one extreme is high growth accompanied by rising inequality, which minimizes the 'trickle-down' effect in terms of the extent of poverty reduction. At the other extreme is 'pro-poor' growth, where significant poverty decline is achieved even with moderate growth.

The objective of this paper is to study the variable nature of the growth-inequality poverty nexus in Pakistan over the last four decades. Episodes of relatively pro-poor growth are identified. The characteristics of such growth are determined.

The rest of the paper is organized as Section I looks at different periods in the history of Pakistan and classifies them into different types of relationships between growth and poverty. Section II then determines the role of different factors in influencing this relationship. Based on this analysis, estimates of the level of inequality and incidence of poverty from 2016-17 to 2022-23 are made in Section III. Finally, Section IV derives the policy implications.

I. The historical relationship between growth, inequality and poverty

The data for this analysis has been obtained primarily from Jamal [2016]. Eight types of outcomes are identified based on the high or low growth rate of per capita income, rise or fall in inequality and rise or fall in the incidence of poverty. The period of analysis is from 1988-89 to 2017-18, with four sub-periods.

The classification of sub-periods is presented in Table 1.

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TABLE 1

Growth Rate of Real Per Capita Income,
Level of Inequality and Incidence of Poverty in Different periods

Epoch	Annual Growth Rate in Real Per Capita Income (per cent)	Annual Growth Rate in the PALMA Ratio (per cent)	Annual Change in the Incidence of Poverty (per cent)	Type of Relationship*
1988-89 to 1998-99[a]	1.3	2.5	1.4	(SG, RI, RP)
1988-99 to 2007-08[b]	2.2	3.2	1.2	(MG, RI, RP)
2007-08 to 2012-13[a]	0.6	-1.7	0.7	(SG, FI, RP)
2012-13 to 2017-18[a]	2.7	0.5	-1.7	(MG, FI, FP)

Source: Authors' estimation.
[a]Democracy | [b]Military Government, *SG = Slow Growth, MG = Moderate Growth, FI = Fall in Inequality,
RI = Rise in Inequality, RP = Rise in Poverty, FP = Fall in Poverty

The period 1988-89 to 1998-99 witnessed frequent changes of domestic governments. The economy achieved only slow growth in real per capita income of 1.3 per cent, while inequality increased. Consequently, there was an increase in the incidence of poverty annually of 1.4 per cent, as shown in Table 1.

The military took over the reins of power in 1999 for a period of nine years up to 2008. There was a significant improvement in the GDP growth rate, and the real per capita increased annually by 2.2 per cent. However, there was also a sharp increase in the level of inequality. This effectively neutralized the impact of rising income and the incidence of poverty continued to increase at almost the same rate as in the previous period of democratic governments.

The military government handed over power to the elected government of the PPP in 2008. The next few years witnessed an extreme slowdown in the GDP growth rate to 3 per cent and only a marginal increase in real per capita income. However, efforts were made to tackle inequality, especially through pro-poor interventions like the Benazir Income Support Program (BISP). This led to a significant decline in the PALMA ratio up to 2013. The incidence of poverty continued to increase but at a modest rate of 0.7 per cent per annum.

The takeover by the PML-N government was accompanied by a spurt in GDP growth, which averaged over 5 per cent. However, inequality started increasing once again, but at a modest rate. The result was that for the first time since 1988-89, there was a visible decline in the incidence of poverty by 1.7 per cent per annum.

The next section sets up a framework for an in-depth analysis of the factors contributing to the change in the incidence poverty.

II. Determinants of inequality

Econometric analysis has been undertaken to identify the contribution of different factors to changes in the level of inequality and incidence of poverty. The results for the former variable are presented in Equation (1):

$$\text{Ln (INEQ)} = -12.984 + 0.890 \, \text{Ln (YM/EMP)} + 0.188 \, \text{Ln (CPROFIT)} + 0.017 \, \text{(NIR)}$$
$$(3.506)^* \qquad\qquad (4.523)^* \qquad\qquad (2.852)^*$$

$$-0.061 \, \text{Ln (PPE/PD)} - 0.376 \, \text{Ln (TXREV/YM} \times \text{PD)} + 0.367 \, \text{Ln (INEQ}_{-1})$$
$$(-1.527)^{**} \qquad\qquad (-3.327)^* \qquad\qquad\qquad (2.659)^{**}$$

(1)

*, ** Significant at the 1and 5 percent respectively.
$(\overline{R^2}) = 0.934$, F-Statistic + 53.656, Durbin-Watson Statistic = 2.154, 27 observations

The variables are as follows:

INEQ	=	Level of Inequality (measured by the PALMA Ratio)
YM	=	GDP at constant prices
EMP	=	Total employment
CPROFIT	=	level of corporate profitability (net return on equity)
NIR	=	Nominal interest rate
PPP	=	Pro-poor expenditure (cash transfers, subsidies, etc.)
PD	=	Domestic price index
TXREV	=	Tax revenues

The role of some factors emerges clearly from the equation. First, a rise in labour productivity tends to raise inequality as it contributes to a higher return on capital. This is supported more directly by the significance of the level of corporate profitability.

Second, the net impact of a higher interest rate appears to be higher inequality because of the rise in the return on financial assets. Third, as expected, higher pro-poor expenditures mitigate against inequality. Fourth, a higher tax burden tends to reduce inequality.

The conclusion is that, ceteris parabus, higher growth tends to increase inequality. For this relationship to be weakened, first, the process of growth has to be more labour-intensive in character. Second, the incidence of taxes, especially direct taxes, needs to be raised. Third, pro-poor public expenditures should be augmented.

III. Determinants of the Incidence of Poverty

Turning now to the determinants of the level of poverty, we have the following Equation (2):

$$
\text{Ln (POVERTY)} = 15.579 - 1.289 \text{ Ln (YM/POP)} + 2.742 \text{ Ln (PF/PD)} - 0.666 \text{ Ln (PPE/PD)}
$$
$$
(-5.027)^* \qquad\qquad (10.007)^* \qquad (-2.310)^{**}
$$
$$
+ 1.262 \text{ Ln (INEQ)}
$$
$$
(12.726)^*
$$

(2)

*, ** Significant at the 1and 5 percent respectively.
$(\overline{R^2}) = 0.967$, F-Statistic + 149.421, Durbin-Watson Statistic = 2.167

The variables are as follows:

POVERTY =   Incidence of Poverty (% of population)
YM   =   GDP at constant prices
POP   =   Population
PF   =   Food Price Index
PD   =   Over Consumer Price Index
PPE   =   Pro-Poor Public expenditure
INEQ   =   Level of Inequality

The magnitudes of the coefficients in equality (2) imply, first, a strong impact of growth in real per capita income on poverty reduction. Second, the change in the level of poverty is very sensitive with respect to a higher rate of increase in food prices than the overall price index. Third, there is a modest growth in real pro-poor expenditure. The fourth finding is that a rise in the level of inequality has a big impact on poverty.

Based on the reduced form of equations (1) and (2), we obtain below the direction of the relationship of the growth in different determinants on poverty with growth in the incidence of poverty.

$$
\frac{\partial gPOV}{\partial g_{YM}} < 0, \ \frac{\partial gPOV}{\partial g_{POV}} > 0, \ \frac{\partial gPOV}{\partial g_{EMPT}} < 0, \ \frac{\partial gPOV}{\partial g_{PF/PD}}
$$

$$
\frac{\partial gPOV}{\partial g_{PPE/PD}} < 0, \ \frac{\partial gPOV}{\partial g_{CIT}} > 0, \ \frac{\partial gPOV}{\Delta \text{ NIR}} > 0, \ \frac{\partial gPOV}{\partial T/YMxPD} < 0, \ \frac{\partial gPOV}{\partial gINEQ_{-1}} > 0.
$$

III. Impact of different factors on poverty

The magnitude of the determinants of poverty identified in the previous section is shown in Table 2 for each of the four eras. This enables the identification of the factors contributing to the increase or decrease in poverty during each era, as follows:

1988-89 to 1998-99

The main factor contributing to tackling poverty was the decline in food prices relative to the overall CPI. Also, the level of corporate profitability remained relatively low, which limited the increase in inequality.

However, the factors impacting negatively on poverty included low GDP growth, modest growth in real poor expenditure, a significant fall in the tax-to-GDP ratio and relatively high-interest rates which increased the unearned incomes of the top segment of the population.

Overall, as highlighted above, this era witnessed an increase in the incidence of poverty.

1998-99 to 2007-08

This era witnessed the fastest growth in employment in the four eras. Also, nominal interest rates were kept at relatively low levels.

However, the era witnessed a jump incorporate profitability, especially with

TABLE 2

Magnitude of Variables Impacting on the
Change in the Level of Inequality and Incidence of Poverty

(%)

Variable	1988-89 to 1998-99	1998-99 to 2007-08	2007-08 to 2012-13	2012-13 to 2017-18
Growth Rate of GDP (g_{YM})	3.9	4.6	3.0	5.1
Growth Rate of Employment (g_{EMP})	2.3 (0.6)*	2.9 (0.6)	2.8 (0.9)	2.8 (0.5)
Level of Corporate Profitability** (CTI)	11.7	22.1	28.9	20.0
Nominal Interest Rate** (NIR)	14.7	9.9	13.2	8.8
Growth Rate of Pro-Poor Expenditure (PPE)	13.0 (3.2)	12.7 (6.7)	29.3 (18.2)	6.0 (-0.4)
Growth Rate of Food Price Index (FP)	9.5	8.6	13.4	3.2
Growth Rate of Consumer Price Index (PD)	9.8	6.0	11.1	6.4
Growth Rate of Tax Revenues to GDP Ratio (T/Y)	-0.8	-2.4	-0.1	5.4

Source: Authors' estimation.
* Employment-to-GDP elasticity, ** Annual Average

the very rapid growth in the large-scale manufacturing sector. Food prices grew at a rate faster than the overall price index. There continued to be a fall in the tax-to-GDP ratio and a limited increase in real pro-poor expenditure.

Overall, the negative factors were larger than the positive factors and there was a rise in the incidence of poverty during this era.

2007-08 to 2012-13

These five years saw more labor-intensive growth. There was an extraordinarily rapid growth in pro-poor expenditure of over 29 per cent per annum. The tax-to-GDP ratio remained, more or less, unchanged.

However, there was only a marginal increase in real per capita income, food prices rose at a rate faster than the overall CPI. Inequality was fostered by high interest rates and a peak in corporate profitability.

The result was an increase in the incidence of poverty but at a slower rate than in the previous two eras.

2012-13 to 2017-18

As highlighted earlier, this period witnessed the fastest GDP growth since 1988-89. This positive development was augmented by a relative fall in food prices and inequality was focused on achieving a big increase in the tax-to-GDP ratio and keeping interest rates low.

However, real pro-poor expenditure showed no growth. Corporate profitability was high and the process of growth was somewhat less labor-intensive.

The positive factors were stronger than the factors impacting negatively on poverty and, consequently, this was the only era which witnessed a decline in the incidence of poverty.

1.   *Projections of the level of inequality and incidence of poverty*

Based on the above equations, projections are made of the level of inequality and poverty from 2019-20 to 2022-23. These years have been very difficult for the people of Pakistan. The pandemic, COVID-19, hit Pakistan in 2019-20, leading to a decline in the level of employment and the GDP. There was some recovery in 2020-21 and 2021-22, with the GDP growth rate rising to 6 per cent. There was then in 2022 the worst floods in Pakistan's history, with a cost to the economy of almost $30 billion. The GDP fell once again and with inflation rising to unprecedented level, there is likely to have been a quantum jump in unemployment and poverty.

The magnitude of variables impacting on the level of inequality and poverty is presented in Table 3. The table clearly shows the big increase in relative food prices in 2022-23. There is substantial variation year-to-year in the growth rates of pro-poor expenditure, level of corporate profitability, interest rates and the tax-to-GDP ratio.

TABLE 3

Magnitude of Determinants of Poverty
2019-20 to 2022-23

(%)

Variable	2019-20	2020-21	2021-22	2022-23
g_{YM}	-0.94	5.77	6.10	-0.50**
g_{POP}	2.55	2.55	2.55	2.55
g_{FP}	9.83	13.23	13.04	39.40
g_{CPI}	10.17	8.90	12.15	29.18
g_{PPE}	47.10	5.20	32.40	37.00
g_{EMP}	-0.56	3.46	3.66	-0.30
g_{CIT}	-18.72	26.72	22.66	-21.70
$\Delta D (NIR)$**	0.96	-1.81	2.23	5.68
$g_{T/Y \, x \, PD}$	-2.15	-5.55	8.05	-9.51

Source: Authors' estimation.
*Growth rates of: YM = GDP, POP = Population, FP = Food Price Index, CPI = Consumer Price Index, PPE = Pro-Poor Expenditure, EMP = Employment, CIT = Level of Corporate Profitability, T/Y = Tax-to-GDP ratio, T/PD = Tax Revenues at Constant Prices.
**Absolute change in the Nominal Interest Rate on Bank Deposits

The resulting projections of the level of inequality and poverty are presented in Table 4. The extraordinarily large jump is observed in both the level of inequality and the incidence of poverty in 2022-23, in the aftermath of the floods. Also, the worsening of the balance of payments, leading to critically low level of foreign exchange reserves, necessitated severe restrictions on the volume even of essential imports.

TABLE 4

Estimated Magnitude of the Growth Rate in the
Level of Inequality and Incidence of Poverty,
2019-20 to 2022-23

(%)

Year	g_{INEQ}	g_{POV}
2019-20	-3.93	-5.58
2020-21	-0.59	5.48
2021-22	2.53	-1.28
2022-23	12.48	29.35

Source: Authors' estimation.

As shown in Table 4, there appears to have been an unprecedented jump in the incidence of poverty 2022-23 of over 29 per cent.

Table 5 gives estimates of the number of poor. The number of poor has increased by 27.8 million in 2022-23 and, consequently, the number now stands at 113 million, equivalent to almost 47 per cent of the population of Pakistan. Simultaneously, there has been a sharp increase in inequality, which along with a big fall in real per capita income and the escalation in food prices, explains the crisis situation in Pakistan with almost half the population now below the poverty line.

TABLE 5

Estimated Incidence of Poverty and Number of Poor,
2019-20 to 2022-23

Year	Incidence of Poverty	Population (Million)	Number of Poor (Million)	Annual Change (Million)
2018-19	37.00	215.30	80.80	-
2019-20	34.82	223.80	77.90	-2.90
2020-21	36.72	229.60	84.30	6.40
2021-22	36.25	235.50	85.40	1.10
2022-23	46.88	241.50	113.20	27.80

Source: Authors' estimation.

IV. Policy Implications

The empirical analysis above of the changing nature of the growth – inequality – poverty nexus in Pakistan has important implications for different types of policies.

The first insight relates to strategies for promoting growth. Rising inequality can be avoided by pursuing a more labor-intensive strategy of growth. This will require greater emphasis on the agricultural sector, construction activities and retail trade. Within the manufacturing sector, the focus will have to be on SMEs by enabling greater access to them to credit and technology, along with various export incentives.

The second policy prescription relates to the design of the tax system. The emphasis has to be on progressive direct taxation. Also, taxation of capital gains and interest income has to be a higher rate on physical and financial assets to restrict the rate of capital accumulation by wealthy households.

A very important finding is the high degree of sensitivity of the level of poverty to a rise in relative food prices. Ceteris parabus, a 1 per cent higher increase in food prices than the overall consumer price index can led to as much as 2.74 percentage points in the incidence of poverty.

The emphasis on restricting the increase in food prices as a key component of the campaign for poverty reduction will require removal of supply bottlenecks, incentives for higher cultivation and yields of food crops. It will also require the building of a much larger network of Utility Stores Corporation outlets in the Pakistan. Poor families with the BISP cards should be the only eligible families with access to basic food items like wheat flour, vegetable ghee, pulses, sugar, etc., in the USC outlets at prices which are 30 per cent to 40 per cent lower than market prices.

Along with lower food prices, pro-poor spending must include other forms of support like inflation-indexed cash transfers, social security for low-paid workers, lower tariffs for small levels of consumption of electricity and gas and wide-ranging microfinance schemes.

In conclusion, Pakistan has a real challenge ahead process of a social breakdown is to be avoided.

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