

CROSS SECTIONAL TRENDS AND DYNAMICS OF ECONOMIC INEQUALITY IN PAKISTAN

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Poverty reduction is twin to growth rate and variation in the distribution of income across the population. The tapered off growth accompanied by unfavorable income distribution aggravates the poverty incidence problem. A comprehensive estimation includes a variety of social and economic dimensions. However, this study is aimed at estimating economic inequality based on income and consumption expenditure as welfare indicators. Estimations have been made by employing Gini Coefficient on HIES data sets for the years 1998-99, 2001-02 and 2004-05, to identify the trends and dynamics of economic inequality. Results revealed that overall consumption inequality in static terms remained unchanged during the whole span of study with higher extent in urban areas while it marginally increased in dynamic aspects. On the other hand, income inequality (both in static and dynamic aspects) worsened at overall and urban levels contrary to its rural counterparts. Proportionate contribution of rural areas to overall consumption inequality has worsened contrary to income inequality. Moreover, income inequality is higher than consumption inequality at all the levels. Inter-provincial analysis showed that Punjab had highest extent and proportionate contribution to overall consumption inequality at all its levels in the initial survey year. Overall inequality dynamics revealed that consumption inequality declined only in Punjab and KPK while rural areas of all the provinces except Punjab exhibited declining trends in both consumption and income inequalities. Similar trends but with higher degree has been found in case of consumption inequality across the regions.

Keywords: Inequality, Gini coefficient, trends, dynamics

INTRODUCTION

Economic inequality has always been an important issue partially for its causality links to economic growth and partially for its poverty enhancing denominator. In addition to the inextricable link between current poverty and vulnerability at both the theoretical and policy level (Banerjee and Newman, 1994), degree of inequality is another key determinant in the recognition of higher global poverty. Absolute poverty can only be alleviated if increased economic growth is sustained and neutral with respect to income distribution (Khan and Sasaki, 2003). Global inequality and level of development exhibit inverse relationship; however, growth rates among developing countries are virtually uncorrelated with changes in inequality levels (Ferreira and Ravallion, 2008).

Developing countries have a high level of inequality (Gini Index value of 0.5 and above), contrary to developed countries. Overall global inequality remained constant during 70s; whereas, it declined in the next two decades (despite dismal growth of African countries), primarily because the incomes of some poor and heavily populated countries rapidly converged to the incomes of OECD countries (Martin, 2006). Though, the global economic expansion has

enabled the world employment to grow by 30 percent during 1990s and 2007; however employment gains could not be shared equally. Ongoing economic slowdown along with development of recent financial crises and sharp rise in food and fuel prices is expected to further increase income inequality (ILO, 2008).

The problem of income inequality drew the attention of Pakistan's policy makers during the mid-sixties. The review of growth pattern, public policy, natural calamities and political system, relative to the income distribution in conjunction with various exogenous shocks, reveals that although Pakistan's growth performance remained encouraging over most of the times but the desired level of equitable distribution could not be attained. Inequality deteriorated in early expansionary phases due to heavy investment in the industrial sector and subsequent shift of labor from the subsistence/low paid traditional agriculture sector to the relatively higher paid industrial sector. Overall and urban inequality increased until 1966-67 was followed by decline during 1968-69 and 1970-71 (Haq, 1964; Bergan, 1967; Azfar, 1973; Jeetun, 1978; and Mahmood, 1984). However, rural inequality declined during the sixties, largely attributable to the Green Revolution, by lowering the income gap between small

and large farms (Chaudhry, 1982). Inequality rose from 1971-72 to 1984-85, with a more pronounced increase in rural areas due to elimination of subsidies on agricultural inputs and increase in output prices to compensate for increasing input prices, which benefited the big landlords more than the peasants and other poor (Mahmood, 1984; Kruijk and Leeuwen, 1985; Ercelawan, 1988; Ahmad and Ludlow, 1989).

Inequality also increased during 1985-86 to 1987-88 due to Structural Adjustment Programs focused on indirect taxes on goods not necessarily consumed by the rich (Kemal, 1994; Jafri and Khattak, 1995; Anwar, 1998). Implementation of Structural Adjustment and Stabilization Programs during the 1990's also fueled this problem but with relatively lower effect in rural areas due to bulk self-employment in homogeneous informal sectors (Ahmad, 2000). During the first half of current decade, inequality continued to increase as a result of primary policy focus of the government on economic growth resulted in widening the gap between extreme income groups of population from 5.50 to 6.24 during 2001 to 2005, respectively (Anwar, 2006, 2007). Simply, the distribution of economic growth was incongruent and benefits of growth could not be transformed to the deprived segments of economy. In order to avert the growing social and political tension, there is dire need to have judicious share/command by poor masses of national income and a reduction of regional disparities.

MATERIALS AND METHODS

This study encompasses the time horizon from 1998-99 to 2004-05 for estimating inequality across regions and over time. Primary data files have been taken from the Household Integrated Economic Survey (HIES), conducted periodically by the Federal Bureau of Statistics (FBS), Statistics Division, Government of Pakistan. These surveys provide complete information on income (sources and level), consumption (quantity and expenditure of all food and non-food items), access to social services and assets (both movable and immovable) at the household level. The primary data files contained population weights for each primary sampling unit designed to approximate nationally representative estimates of population.

Sampling frame and design: The FBS used separate sampling frames for urban and rural areas. Households were the unit of survey/element of the sampling frame. A two-stage stratified sample design was adopted for these surveys.

Estimation of inequality: Household income and consumption expenditure obtained from HIES data sets used to estimate income and consumption pattern inequality (vertical) for the whole population across regions and overtime, was further analyzed to gauge regional dynamics. The proportionate difference of two data sets, (1998-99, 2001-02) and (2001-02, 2004-05), was used to estimate the percentage change between each interval. The "difference of difference" is used to grasp the 7-year vertical inequality dynamics across regions. Proportionate regional contribution and provincial ranking is also established.

Inequality has been estimated using Gini Coefficient. It is the ratio of twice the area between the Lorenz curve and the diagonal line. Mathematically, the Gini Coefficient is expressed as:

$$Gini = \frac{2}{n^2 \bar{y}} \sum_{i=1}^n i(y_i - \bar{y})$$

Income (y_i) is arranged in ascending order by their subscripts and thereby created scope for numerous generalization. The Gini Coefficient is most sensitive to the middle part of distribution because it depends on the rank order weights of income recipients and on the number of recipients within a given range.

RESULTS AND DISCUSSION

Results presented in Table 1 indicate that consumption inequality measured by Gini Coefficient has decreased at varying extent both in rural and urban areas of Pakistan during 1998-99 to 2001-02. Inequality appeared to be relatively high in urban areas as compared to its rural counterparts. Accordingly, proportionate contribution of rural to overall poverty has declined while contribution of urban areas increased. Declining trend of consumption inequality turned around during 2001-02 to 2004-05, attributed to rise in rural Gini Coefficient. Inequality is still an urban phenomenon; however, relative proportionate contribution of rural areas increased during this period. In case of income inequality, relatively higher values of Gini coefficient are found across all levels in comparison with consumption inequality. During 1998-99 to 2001-02, overall inequality remained unchanged as the effect of increased urban inequality is off-set by improvement in rural income distribution. Similar trends are also observed in proportionate contribution of urban and rural areas to overall income inequality. During 2001-02 to 2004-05, overall and urban inequality continued to increase while rural inequality remained unchanged. Urban areas not only have higher proportionate contribution to overall inequality but the same has worsened over time (Table 1).

Overall inequality dynamics for the whole period (1998-2005), what we call “difference of difference” depicted an overall marginal increase of consumption inequality by 0.76 percent in the country. Consumption inequality dynamics at regional level indicated relatively more improvement in urban consumption as compared to its rural counterparts (Table 2). On the other hand, income inequality decreased in rural areas while increased at overall and urban levels (Table 2). Though overall inequality marginally increased over period of time; however it is still very high in urban areas contributing sixty and fifty eight percent to overall consumption and income inequality, respectively. Inequality trends depicted by this study are in conformity with other studies covering the same period (Anwar, 1998, 2003, 2006).

Inequality has distinct multivariate causes and extent in different regions. High urban inequality may be due to diversity of urban labor force in terms of skill, education, union membership, coverage by minimum wage legislation and concentration of diversified self-employment opportunities in urban areas. On the other hand, bulk engagement of rural self-employed in homogeneous informal sector enterprises is the reason of low relative rural inequality. Rural inequality is also due to lack of land occupancy by majority of rural population (54.89%), highly skewed land ownership (Gini Coefficient of 0.61), nature of farming (arid or irrigated), type of enterprises, level of investment, elimination of subsidies on agricultural inputs and resultant increase in output prices benefiting big landlords more than peasants and poor, exclusion of large group from access to loan, insurance, better education and other non-economic opportunities (Kemal, 1994; Anwar, 1998, 2003, 2006, 2007).

Inter-provincial vertical inequality (consumption and income) : Results of Table 1 revealed the highest consumption inequalities in Punjab across all levels, followed by Sindh, KPK and Baluchistan provinces in 1998-99. If we visualize the inter-provincial proportionate contribution to overall inequality, Punjab was contributing 28.88 percent, Sindh 28.14 percent, KPK 23.70 percent and Baluchistan 19.25 percent. During the span of study period (1998-99 to 2004-05), overall consumption inequality declined in Punjab and KPK while it marginally increased in other two provinces. On the other hand, all the provinces exhibited declining trends in rural inequality except Punjab. Inter-provincial statistics also indicated increased proportionate contribution of rural Punjab to overall inequality. Thus, relative ranking of various

provinces at different level changed considerably. The position of Punjab in terms of highest consumption inequality across all levels during 1998-99 has been substituted by Sindh for overall and urban inequality during 2004-05. However, Punjab maintained its highest position of rural inequality. Similarly, the position of KPK reshuffled at rural level indicating worsening of rural inequality while the same is improved in Baluchistan during 1998-99 to 2004-05. When we look at the income inequality as measured by income Gini, it is observed that the extent of income inequality is higher for the same population groups in comparison to consumption inequality. However, position of different provinces in terms of income disparity is same as in case of consumption inequality during 1998-99 (Table 3).

The inter-provincial proportionate contribution to overall inequality revealed that Punjab was contributing 26.99 percent, Sindh 26.38 percent, KPK 25.76 percent and Baluchistan 20.85 percent. During the span of study (1998-99 to 2004-05), overall income inequality worsened in Punjab across all levels, while mix trends were observed in other provinces. However, rural inequality declined in all the provinces, except Punjab, while urban inequality worsened in all the provinces. Moreover, the provincial statistics also indicated increased proportionate share of rural Punjab to its overall inequality while the rural contribution in other provinces to their overall inequality decreased. Thus, relative ranking of various provinces at different levels changed considerably during 1998-99 to 2004-05 (Table 3).

CONCLUSIONS

Across time, overall consumption inequality in static terms remained unchanged while income inequality worsened at overall and urban levels contrary to its rural counterparts. Proportionate contribution of rural areas to overall consumption inequality worsened contrary to income inequality. Comparisons of the extent of both inequalities reveal that income inequality is found higher than consumption inequality at all levels. Inter-provincial analysis showed that Punjab was having the highest level of consumption inequality at all levels during 1998-99. However, its relative ranking at overall and urban levels improved in 2004-05. Proportionate contribution of rural Punjab to its overall inequality worsened. On the other hand, income inequality worsened at all its levels during the whole span of study. Relative ranking of Sindh for consumption

Table 1. Regional trends of vertical economic inequality in Pakistan

Region	1998-99			2001-2002			2004-2005		
	Overall	Urban	Rural	Overall	Urban	Rural	Overall	Urban	Rural
Pakistan									
Income Gini	0.42	0.45	0.36	0.42	0.46	0.34	0.43	0.47	0.34
Consumption Gini	0.36	(55.56)	(44.44)	0.33	(57.50)	(42.50)	0.36	(58.02)	(41.98)
		0.41	0.27		0.39	0.24		0.39	0.26
		(60.29)	(39.71)		(61.90)	(38.10)		(60.00)	(40.00)
Punjab									
Income Gini	0.44	0.47	0.34	0.42	0.46	0.35	0.45	0.48	0.36
Consumption Gini	{26.994}	(58.02)	(41.98)	{25.926}	(56.79)	(43.21)	{26.946}	(57.14)	(42.86)
	0.39	0.44	0.27	0.34	0.38	0.26	0.37	0.41	0.29
	{28.889}	(61.97)	(38.03)	{27.419}	(59.38)	(40.63)	{28.24}	(58.57)	(41.43)
Sindh									
Income Gini	0.43	0.43	0.38	0.45	0.48	0.32	0.45	0.46	0.32
Consumption Gini	{26.380}	(53.09)	(46.91)	{27.778}	(60.00)	(40.00)	{26.946}	(58.97)	(41.03)
	0.38	0.4	0.26	0.4	0.44	0.23	0.38	0.41	0.23
	{28.148}	(60.61)	(39.39)	{32.258}	(65.67)	(34.33)	{29.008}	(64.06)	(35.94)
KPK									
Income Gini	0.42	0.46	0.35	0.41	0.44	0.37	0.41	0.47	0.31
Consumption Gini	{25.767}	(56.79)	(43.21)	{25.309}	(54.32)	(45.68)	{24.551}	(60.26)	(39.74)
	0.32	0.39	0.25	0.26	0.3	0.22	0.3	0.35	0.23
	{23.704}	(60.94)	(39.06)	{20.96}	(57.69)	(42.31)	{22.901}	(60.34)	(39.66)
Baluchistan									
Income Gini	0.34	0.32	0.35	0.34	0.41	0.28	0.36	0.37	0.33
Consumption Gini	{20.859}	(47.76)	(52.24)	{20.988}	(59.42)	(40.58)	{21.557}	(52.86)	(47.14)
	0.26	0.27	0.26	0.24	0.27	0.22	0.26	0.28	0.23
	{19.259}	(50.94)	(49.06)	{19.35}	(55.10)	(44.90)	{19.84}	(54.90)	(45.10)

(): Proportionate contribution of urban & rural areas to overall inequality.

{ }: Inter-provincial contribution to overall inequality.

Table 2. Regional dynamics of vertical economic inequality in Pakistan

Region	% Change between 1998-1999 & 2001-2002			% Change between 2001-2002 & 2004-2005			Difference of Difference		
	Overall	Urban	Rural	Overall	Urban	Rural	Overall	Urban	Rural
Pakistan									
Income Gini	0.00	2.22	-5.56	2.38	2.17	0.00	2.38	4.40	-5.56
Consumption Gini	-8.33	-4.88	-11.11	9.09	0.00	8.33	0.76	-4.88	-2.78
Punjab									
Income Gini	-4.55	-2.13	2.94	7.14	4.35	2.86	2.60	2.22	5.80
Consumption Gini	-12.82	-13.64	-3.70	8.82	7.89	11.54	-4.00	-5.74	7.83
Sindh									
Income Gini	4.65	11.63	-15.79	0.00	-4.17	0.00	4.65	7.46	-15.79
Consumption Gini	5.26	10.00	-11.54	-5.00	-6.82	0.00	0.26	3.18	-11.54
KPK									
Income Gini	-2.38	-4.35	5.71	0.00	6.82	-16.22	-2.38	2.47	-10.50
Consumption Gini	-18.75	-23.08	-12.00	15.38	16.67	4.55	-3.37	-6.41	-7.45
Baluchistan									
Income Gini	0.00	28.13	-20.00	5.88	-9.76	17.86	5088	18.37	-2.14
Consumption Gini	-7.69	0.00	-15.38	8.33	3.70	4.55	0.64	3.70	-10.84

Table 3. Relative ranking of regions in three survey years

Inequality Measure	1998-1999			2001-2002			2004-2005		
	Overall	Urban	Rural	Overall	Urban	Rural	Overall	Urban	Rural
Income Gini	Punjab (0.44)	Punjab (0.47)	Sindh (0.38)	Sindh (0.45)	Sindh (0.48)	KPK (0.37)	Punjab (0.45)	Punjab (0.48)	Punjab (0.36)
Consumption Gini	Punjab (0.39)	Punjab (0.44)	Punjab (0.27)	Sindh (0.40)	Sindh (0.44)	Punjab (0.26)	Sindh (0.38)	Sindh (0.41)	Punjab (0.29)
Income Gini	Sindh (0.43)	KPK (0.46)	KPK (0.35)	Punjab (0.42)	Punjab (0.46)	Punjab (0.35)	Sindh (0.45)	KPK (0.47)	Baluch. (0.33)
Consumption Gini	Sindh (0.38)	Sindh (0.40)	Sindh (0.26)	Punjab (0.34)	Punjab (0.38)	Sindh (0.23)	Punjab (0.37)	Punjab (0.41)	Sindh (0.23)
Income Gini	KPK (0.42)	Sindh (0.43)	Baluch. (0.35)	KPK (0.41)	KPK (0.44)	Sindh (0.32)	KPK (0.41)	Sindh (0.46)	Sindh (0.32)
Consumption Gini	KPK (0.32)	KPK (0.39)	Baluch. (0.26)	KPK (0.26)	KPK (0.30)	KPK (0.22)	KPK (0.30)	KPK (0.35)	KPK (0.23)
Income Gini	Baluch. (0.34)	Baluch. (0.32)	Punjab (0.34)	Baluch. (0.34)	Baluch. (0.41)	Baluch. (0.28)	Baluch. (0.36)	Baluch. (0.37)	KPK (0.31)
Consumption Gini	Baluch. (0.26)	Baluch. (0.27)	KPK (0.25)	Baluch. (0.24)	Baluch. (0.27)	Baluch. (0.22)	Baluch. (0.26)	Baluch. (0.28)	Baluch. (0.23)

inequality at overall and urban levels worsened while it remained unchanged for the rural areas. Income inequality also exhibited similar trends, except rural areas where it has improved. KPK exhibited declining trend in both inequalities at all of its levels contrary to Baluchistan where inequalities improved only in its rural areas. Keeping these findings in view, it is suggested that the issue of economic inequality in Pakistan should be handled spatially by targeting highly effected areas differently than that of less effected regions. A heterogeneous and holistic approach towards this end should be the hallmark of our development strategies in Pakistan.

REFERENCES

- Ahmad, E. and S. Ludlow. 1989. Poverty, inequality and growth in Pakistan. *The Pak. Dev. Rev.* 28(4): 831-850.
- Ahmad, M. 2000. Estimation of distribution of income in Pakistan, using micro data. *The Pak. Dev. Rev.* 39(4):807-824.
- Anwar, T. 1998. Inequality and social welfare in Pakistan. *J. Soc. Sci. & Hum.* 1: 241-63.
- Anwar, T. 2003. Trends in income inequality in Pakistan between 1988-99 and 2001-02. *The Pak. Dev. Rev.* 42(4):809-821.
- Anwar, T. 2006. Changes in inequality of consumption and opportunities in Pakistan during 2001-02 and 2004-05. Research Report No. 3. CRPRID, Islamabad.
- Anwar, T. 2007. Growth and sectoral inequality in Pakistan: 2001-02 to 2004-05. *Pak. Eco. Soc. Rev.* 45(2):141-154.
- Azfar, J. 1973. The Distribution of income in Pakistan: 1966-67. *Pak. Econ. & Soc. Rev.* Vol (11): 40-66.
- Banerjee, A. and A. Newman. 1994. Poverty, incentives and development. *Am. Econ. Rev.* 82(2):211-215.
- Bergan, A. 1967. Personal income distribution and personal savings in Pakistan, 1963-64. *The Pak. Dev. Rev.* 7(2):160-212.
- Chaudhry, M.G. 1982. Green revolution and redistribution of rural income Pakistan experience. *The Pak. Dev. Rev.* 21(3):173-205.
- Ercelawn, A. 1988. Income inequality in Pakistan during the 70s: Issues in estimation. discussion Paper No. 92. Applied Eco. Res. Cent. Karachi.
- Ferreira, F.H.G. and M. Ravallion. 2008. Global poverty and inequality: A review of evidence. Policy Research Working Paper No. 4623. World Bank, Washington, D.C.
- Haq, K. 1964. A measurement of inequality in urban personal income distribution in Pakistan. *The Pak. Dev. Rev.* 4(4):623-664.
- ILO. 2008. World of work report: Income inequalities in the age of financial globalization. International Institute for Labor Studies.
- Jafri, S.M. and A. Khattak. 1995. Income inequality and poverty in Pakistan. *The Pak. Econ. & Soc. Rev.* 33(1 & 2):37-58.

- Jeetun, A. 1978. Trends in inequality of income distribution in Pakistan. Discussion Paper No. 29. Applied Economic research Centre, University of Karachi.
- Kemal, A.R. 1994. Structural adjustment, employment, income distribution and poverty. *The Pak. Dev. Rev.* 33(4):901-914.
- Khan, M.T.Y. and K. Sasaki. 2003. Regional disparity in Pakistan's economy: Regional econometric analysis of causes and remedies. *Interdisciplinary Information Sciences* 9(2):293-308.
- Kruijk, H.D. and M.V. Leeuwen. 1985. Changes in poverty and income inequality in Pakistan during the 1970s. *The Pak. Dev. Rev.* 24(3&4):407-422.
- Mahmood, Z. 1984. Income inequality in Pakistan. An analysis of existing evidence. *The Pak. Dev. Rev.* 23(2 & 3):365-367.
- Martin, X.S. 2006. The world distribution of income: Falling poverty and convergence period. *The Quart. J. Econ.*, CXXXI (2).