

# TRENDS IN INEQUALITY, WELFARE AND GROWTH IN PAKISTAN; 1963-64 TO 2004-05

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By  
Nadia Zakir



Dec 02, 08

# Introduction

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- In Pakistan we have a basic problem of unsustainable growth over the years

**Table 1: Growth and Income Distribution in Pakistan**

Period	Growth(%)	Income distribution
1960s	6.8	Improved
1970s	4.8	Worsened
1980s	6.5	Slightly improved
1990s	4.6	Worsened
2000s*	5.6	Worsened

- Economic growth has remained high but it has also failed to improve the living conditions of the poor segment of the society.
- Growth can never sustain without a proper income distribution in the country
- Inequality and Welfare measurement is important for achieving sustainable growth, economic development, poverty reduction and fruitful public policies. This implies that a consistent long-term analysis of income inequality and Welfare is essential for any further analysis

# Objective of the Study

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- To present a consistent time series of (income and consumption) inequalities, welfare and growth in Pakistan and its rural-urban areas from 1963-64 to 2004-05.

# Review of Literature

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- Huge Literature on Measurement of Income / Consumption Inequality
  - Pioneering work of Haq (1964)
  
- Classification of Earlier Studies on Measurement of Income / Consumption Inequality
  - With respect to the data source
  
  - With respect to the format of data used
  
  - With respect to area coverage
  
  - With respect to choice of the welfare indicator
  
  - With respect to the measures used to access inequality
  
  - With respect to choice of the unit of measurement

**Table2: Comparative Analysis of Studies Measuring Income / Consumption Inequalities in Pakistan**

Study	Data Source and Format	Period of Analysis	Region of Analysis	Welfare Indicator	Measure of Inequality	Unit of Measurement
Haq (1964)	Income tax data (Grouped)	1948-49 to 1957-58	Urban Pak.	Income	Gini coefficient, Pareto coefficient and Relative shares	Personal Income
Bergan (1967)	Income tax data HIES (Grouped data)	1963-64	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient	Household
Azfar (1973)	HIES (Grouped data)	1966-67	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient and Coefficient of variation	Household
Khandker (1973)	HIES (Grouped data)	1963-64 to 1968-69	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient	Household Household Per Capita
Naseem (1973)	HIES (Grouped data)	1963-64 to 1970-71	Rural Pak. Urban Pak.	Consumption	Gini coefficient	Household Household Per Capita
Alauddin (1975)	HIES (Grouped data)	1963-64 to 1971-72	Rural Pak. Urban Pak.	Income and Consumption	Gini coefficient	Household Household Per Capita
Mahmood (1984)	HIES (Grouped data)	1963-64 to 1979	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient, Coefficient of variation, SD. of log of income, Theil Index and Atkinson index	Household
Choudhary (1984)	HIES (Grouped data)	1963-64 to 1979	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient, Coefficient of variation, SD. of logs of income, Deciles and Quintiles	Household Household Per Capita
Kruijk& Leeuwen (1985)	HIES (Grouped data)	1969-70 and 1979	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient, Coefficient of variation, SD. of logs of income and Theil index	Household
Ahmad & Ludlow (1989)	HIES (micro data)	1979 and 1984-85	Overall Pak. Rural Pak. Urban Pak. Provinces	Income and Consumption	Gini coefficient, Coefficient of variation, log-variance and Atkinson index	Household
Jehle (1992)	HIES (micro data)	1984-85 to 1987-88	Overall Pak. Provinces	Consumption	Atkinson Kolm-Sen index	Household Per Adult Equivalence
Jafri & Khattak (1995)	HIES (Micro data)	1979 to 1991	Overall Pak. Rural Pak. Urban Pak.	Income	Gini coefficient and Income shares	Household
Haq (1998)	HIES (Grouped data)	1979 to 1992	Overall Pak. Rural Pak. Urban Pak.	Consumption	Gini coefficient	Household Per Adult Equivalence
Ahmad (2000)	HIES (Grouped and micro data)	1992	Overall Pak. Rural Pak. Urban Pak. Provinces	Income	Gini coefficient, Coefficient of variation SD of logs of incomes, Theil Index and Atkinson index	Household and Household Per Capita
Jamal (2003)	HIES (Micro data)	1987-88 and 1998-99	Overall Pak. Rural Pak. Urban Pak.	Consumption	Gini coefficient and Ratio of Quintiles	Household Per Adult Equivalence
Anwar (2003)	HIES (Micro data)	1998-99 and 2001-02	Overall Pak. Rural Pak. Urban Pak.	Consumption	Gini coefficient	Household Per Adult Equivalence

**Table 3: Inequality Trends in Pakistan as Shown by the Earlier Studies**

Author	Welfare Indicator	Area coverage	Inequality Trends in the Sixties and Seventies					
			63-64 to 66-67	66-67 to 68-69	68-69 to 69-70	69-70 to 70-71	70-71 to 71-72	71-72 to 1979
Khandker (1973)	Household Income Per Capita Income	Pakistan	Decrease	Decrease	-	-	-	-
		Rural	Decrease	Decrease	-	-	-	-
		Urban	Increase	Decrease	-	-	-	-
		Pakistan	Decrease	Decrease	-	-	-	-
		Rural urban	Decrease Increase	Decrease Decrease	- -	- -	- -	- -
Naseem (1973)	Household Consumption Per Capita Consumption	Rural	Stagnant	Decrease	Decrease	Stagnant	-	-
		urban	Increase	Decrease	Decrease	Decrease	-	-
		Rural	Decrease	Decrease	Decrease	Decrease	-	-
		urban	Increase	Increase	Increase	Decrease	-	-
Alauddin (1975)	Household Income Household Consumption Per Capita Income Per Capita Consumption	Rural	Decrease	Decrease	Decrease	Stagnant	Increase	-
		urban	Increase	Decrease	Decrease	Decrease	Increase	-
		Rural	Decrease	Decrease	Stagnant	Decrease	Increase	-
		urban	Increase	Decrease	Decrease	Decrease	Increase	-
		Rural	Decrease	Decrease	Increase	Decrease	Increase	-
		Urban	Increase	Decrease	Decrease	Decrease	Increase	-
		Rural Urban	Decrease Increase	Decrease Increase	Decrease Decrease	Decrease Decrease	Increase Increase	- -
Mahmood (1984)	Household Income Gini Household Income Coefficient of Var. Household Income Atkinson Index	Pakistan	Decrease	Decrease	Decrease	Decrease	Increase	Increase
		Rural	Decrease	Decrease	Increase	Decrease	Increase	Increase
		Urban	Decrease	Decrease	Decrease	Increase	Increase	Increase
		Pakistan	Increase	Decrease	Decrease	Decrease	Increase	Increase
		Rural	Decrease	Decrease	Increase	Decrease	Increase	Increase
		Urban	Increase	Decrease	Decrease	Decrease	Increase	Increase
		Pakistan	Decrease	Decrease	Decrease	Decrease	Increase	Increase
		Rural Urban	Decrease Increase	Decrease Decrease	Increase Decrease	Decrease Increase	Increase Increase	Increase Increase
Choudhary (1984)	Household Income Per Capita Income	Pakistan	Decrease	Decrease	Increase	Decrease	Increase	Increase
		Rural	Decrease	Decrease	Decrease	Decrease	Increase	Increase
		Urban	Increase	Decrease	Decrease	Decrease	Increase	Increase
		Pakistan	Decrease	Decrease	Decrease	Decrease	Increase	Increase
		Rural Urban	Decrease Increase	Decrease Increase	Increase Decrease	Decrease Decrease	Increase Increase	Increase Increase
Kruijk & Leeuwen (1985)	Household Income	Pakistan	-	-	-	-	-	Increase
		Rural	-	-	-	-	-	Increase
		Urban	-	-	-	-	-	Increase

**(Continued) Table 2: Inequality Trends in Pakistan as Shown By the Earlier Studies**

Author	Welfare Indicator	Area	Inequality Trends in the Eighties				
			1979 to 84-85	84-85 to 85-86	85-86 to 86-87	86-87 to 87-88	87-88 to 90-91
Ahmad and Ludlow (1989)	Household Income and Household Consumption	Pakistan Rural Urban	Increase Increase Decrease	- - - -	- - - -	- - - -	- - - -
Jafri and Khattak (1995)	Household Income	Pakistan Rural Urban	Decrease Increase Decrease	Decrease Decrease Decrease	Decrease Decrease Stagnant	Increase Decrease Increase	Increase Increase Increase
Haq (1998)	Consumption Per Adult Equivalent	Pakistan Rural Urban	Increase Increase Increase	Decrease Decrease Decrease	-	Increase Decrease Stagnant	Decrease Decrease Decrease
Author	Welfare Indicator	Area	Inequality Trends in Late Eighties and Nineties				
			87-88 to 1998-99	1998-99 to 2001-02			
Jamal (2003)	Consumption Per Adult Equivalent	Pakistan Rural Urban	Increase Increase Increase	- - -			
Anwar (2003)	Consumption Per Adult Equivalent	Pakistan Rural Urban	- - -	Increase Increase Decrease			

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- Due to these differences in methods of measurement and shorter period of analysis in previous studies
    - We cannot combine their results to evaluate long term trend in Income distribution
    - We get some contradictory results
  
  - Income distribution after the mid eighties
  
  - Welfare, is quite unexplored area in Pakistan.
  
  - The present study is an attempt to bridge this gap by not only providing a long period consistent series of income and consumption inequalities, but also by analyzing the trends in welfare and growth.



# Methodological Issues

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- The Data
  - Source of data
  - Period of analysis
  - Area coverage
  
- Inequality measures
  - A good inequality measure should possess following properties
    - Symmetry
    - Population principal
    - Income transfer principal
    - Decomposability
    - Defined limits

# Analysis of Some Major Inequality Measures

Measures	Pigou Dalton Principle	Income Scale Independence	Decomposable	Range	
				Lower Limit (Perfect Equality)	Upper limit (Perfect Inequality)
Coefficient of variation	Yes	Yes	Yes	0	$\sqrt{(n-1)}$
Kuznet Ratios	No	No	No	Y/x	$\infty$
Lorenz Curve	Yes	Yes	-	-	-
Gini Coefficient	Yes	Yes	Yes	0	1
Atkinson's index	Yes	Yes	Yes	0	1
Dalton's index	Yes	No	Yes	0	$\infty$
Theil's index	Yes	Yes	Yes	0	logn
Generalized Entropy	Yes	Yes	Yes	0	$\infty$

## ■ Selected inequality measure

- The Gini coefficient

$$G = 1 - \sum_{i=0}^{k-1} (P_{i+1} + P_i)(Q_{i+1} - Q_i)$$

where,  $G$  is the Gini Coefficient,  $P_i$  is the Cumulated proportion of Income variable and  $Q_i$  is the Cumulated Proportion of Population variable corresponding to income unit, when all income units are arranged in ascending order of income.

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□ **WELFARE MEASURE**

For the measurement of welfare Sen's welfare index (1974) is used which takes into account both the size and the distribution of income. It is defined as:

$$W = \mu (1 - G)$$

Where, 'μ' is the mean income and  $G$  is the Gini Coefficient measuring inequality. Welfare will be maximum and equal to the mean income when there is no inequality (i.e.,  $G = 0$ ) and welfare will be zero when inequality is maximum (i.e.,  $G = 1$ ).

□ **REAL MEAN INCOME AND CONSUMPTION**

The variations in real income /consumption show the true variations in purchasing power of income units. In order to calculate real estimates, the nominal figures are adjusted through Consumer price indices.

# Income and Consumption Inequalities

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- Income and consumption inequalities in Pakistan and its rural-urban areas (1963-64 to 2004-05)

## Welfare Indicators

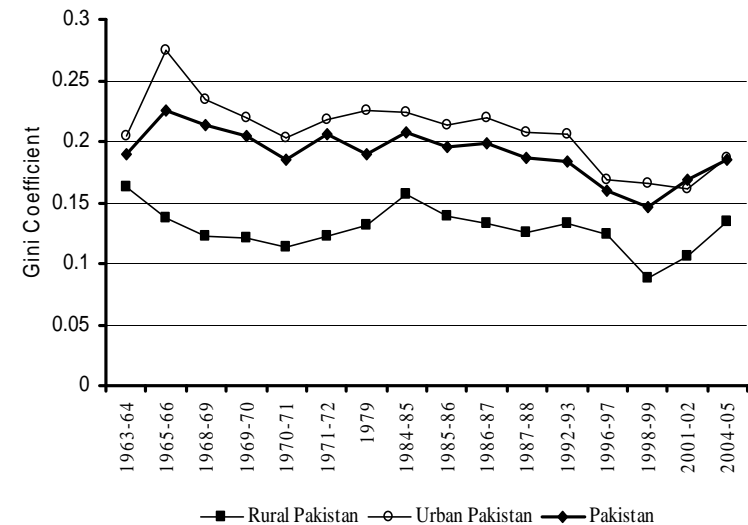
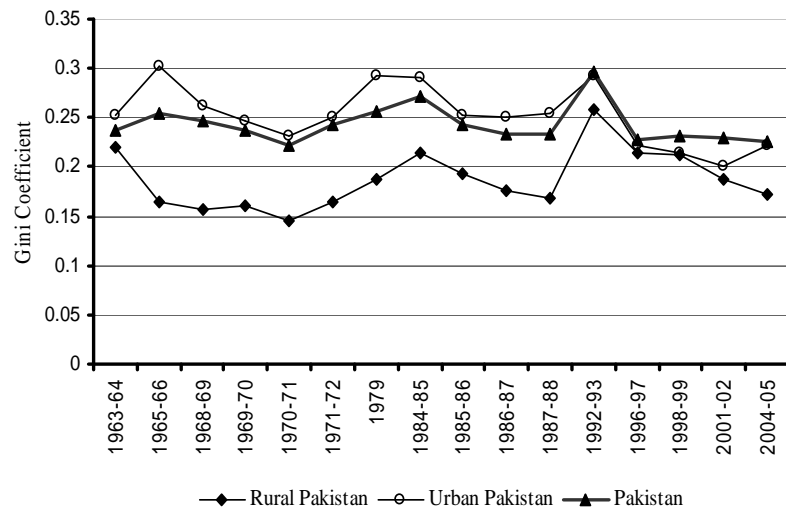
- i) Income
- ii) consumption

## Units of measurement

- i) Household Per Capita

- Income inequality
  - Income inequality before East Pakistan separation
  - Income inequality in seventies and early eighties
  - Income inequality during 1987-88 to 1992-93 period
  - Income inequality in the mid nineties and thereafter

## (a): Time Profiles of Per Capita Household Income and Consumption Inequality in Pakistan



- Income inequality declined in the decade of 60s to a lower level, then increased till early eighties, improved in mid eighties, sharply rose during 1987-88 and 1992-93 and improved thereafter but the level remained high
- Till the mid eighties, trend in consumption inequality was same as in income inequality. After that inequality declined till 1998-99 and started increasing again to the previous level.

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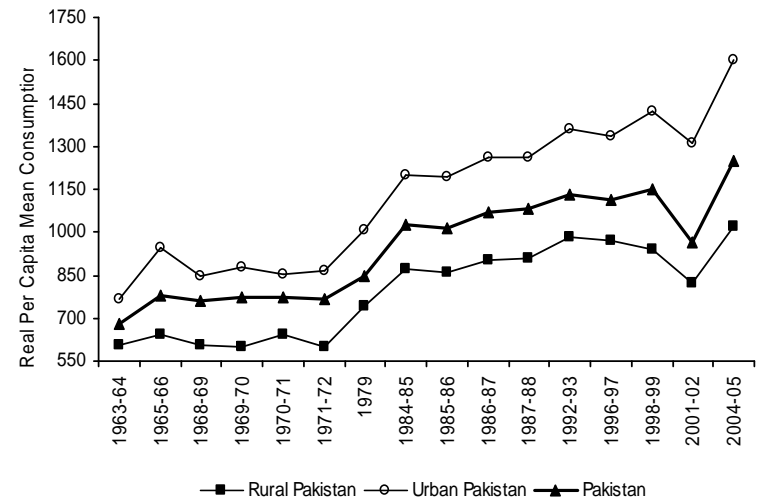
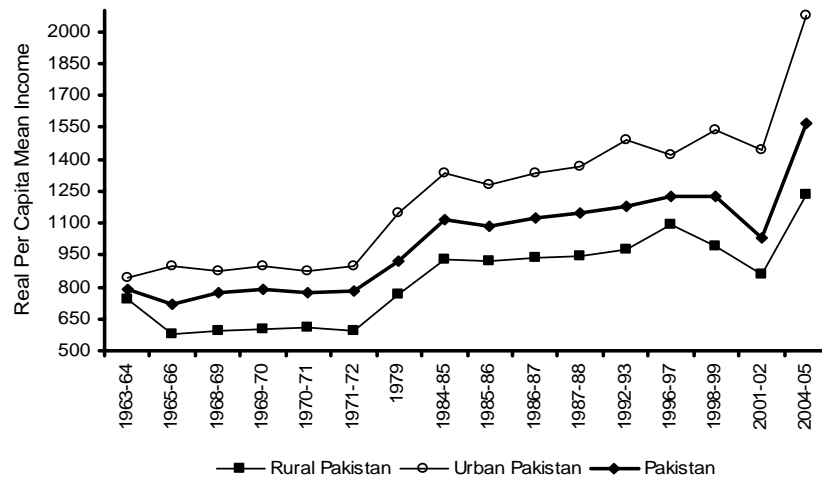
- **Rural versus urban inequality**

- The regional analysis in general shows that throughout the period of analysis income and consumption inequalities were more severe in urban areas than in the rural areas.

- **Income versus Consumption inequality**

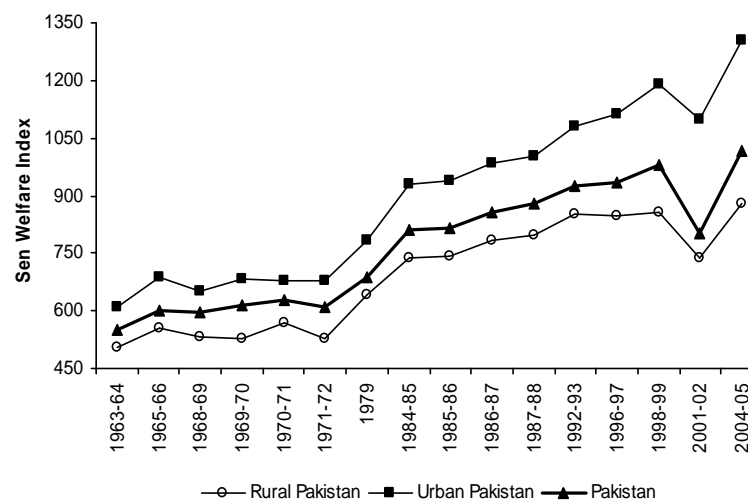
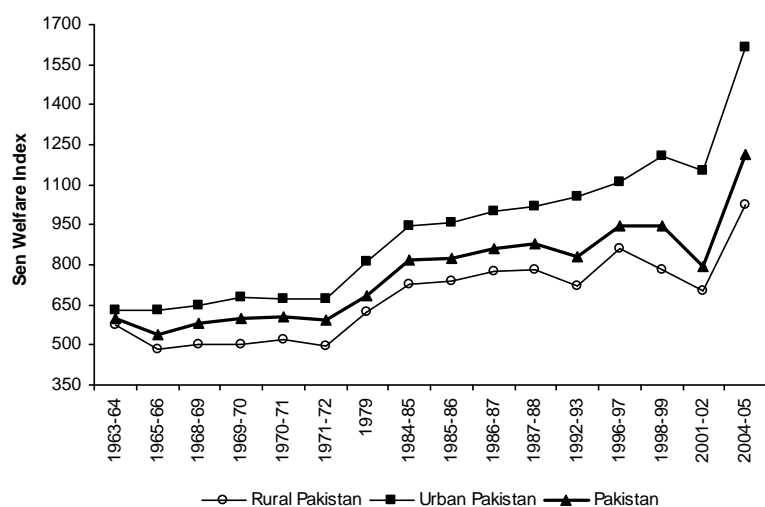
- The extent of inequality in consumption has been by-and-large less than the extent of income inequality

## (b): Time Profiles of Per Capita Household Mean Incomes and consumption in Pakistan



- The figures of per capita household real mean income and consumption in general show rising trends. However possibly due to high inflation rates the figures decline for few years.

## (C): Time Profiles of Per Capita Household Income and Consumption Welfare in Pakistan



- Welfare declined till the mid 60s in rural and overall Pakistan. It increased between the periods 1970-71 to 1987-88. In the year 1992-93, income inequality sharply rose and we find a decline in rural and overall welfare in that period.

Whereas in the last year of our analysis welfare level increased in all areas due to a significant increase in per capita real mean incomes in those areas



# Main Findings

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- Income inequality
  - declined before East Pakistan separation (1963-71)
  - increased in seventies and early eighties (1971-72 to 1984-85)
  - improved in mid 80s
  - sharply rose during (1987-1992)
  - improved but level remained high thereafter
  
- Consumption inequality showed the same trend till the mid 80s. After that it narrowed down and increased again during recent years.
  
- In general the distribution of consumption expenditures is less unequal than the distribution of income
  
- In general the trend in income /consumption inequalities was same in both rural and urban areas; however the level of inequalities was mostly higher in urban areas

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- Welfare, generally, increased over the time but the trend in welfare is almost the same as that of growth in real mean income or consumption.

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***THANK YOU***

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