Income Inequality and Economic Welfare: A Decomposition Analysis for the Household Sector in Pakistan

Rashida Haq*

The PIDE Research Report Series offers an up-to-date exposition of various economic, demographic, and anthropological aspects of the development process in developing countries generally and in Pakistan particularly. Its wide dissemination is aimed at providing a firm foundation for useful policy-making in addition to encouraging academic interaction.

The major areas of research addressed by the Series are macroeconomics and sectoral issues, international trade, labour market issues, demographic patterns, anthropological approaches, growth, and distribution. Manuscripts submitted for publication in the Series are reviewed by the PIDE Research Report Committee and published from time to time.

PIDE Research Report Committee

Zafar Mahmood   Naushin Mahmood   Zafar Iqbal

Income Inequality and Economic Welfare: A Decomposition Analysis for the Household Sector in Pakistan

Rashida Haq

Staff Economist,
Pakistan Institute of Development Economics, Islamabad.

To,
Hadi, Saadi and Saadia

CONTENTS

(iii)

List of Tables

Chapter 1

INTRODUCTION

The prime goal of economic policy is economic growth, as such the growth performance of a country has become a major criterion for judging its economic performance. GNP per capita is held to be the objective measurable counterpart of economic welfare, which means that part of total state of satisfaction, which depends on economic activity. An increase in GNP per head is supposed to mean an increase in economic welfare. Despite substantial increase in per capita incomes of most of the developing countries, poverty has remained widespread and in many countries, the problem has been aggravated by a very rapid increase in income inequalities. Thus, a country's development can only be accomplished if everyone contributes and the gains of development are fairly distributed.

The term 'income inequality' is used quite generally as the income difference. Kuznets (1953) in his pioneering study on income set out by stating that when we say 'income inequality', we mean simply the difference in income without regard to their desirability as a system of reward or undesirability as a scheme running counter to some ideal of equity. The surge for income distribution studies, both in developed and developing countries, has however, been caused by different reasons. In the developed nations a high economic growth, in terms of GNP per capita and the introduction of the concept of a welfare state, necessitated a widespread debate on income inequality and relative poverty issues. In the developing countries failure to achieve sustainable high growth rates and disappointment from the pursuit of growth-led macro-economic policies in the past decade and so, has surfaced a need to conduct income distribution studies and policies.

The importance of this paper is that it provides a basis for determining the sources and magnitude of inequality and welfare if policies for reducing inequality and poverty are consider, because different types of inequality require different policy instruments. This study analyzes a decomposition analysis of income inequality and welfare in Pakistan, during the period 1979 to 1992-93. The source of data is "Household Income and Expenditure Survey" for the years 1979, 1984-85, 1985-86, 1986-87, 1987-88 and 1992-93. To analyze inequality and welfare across different time periods, all the data is adjusted on 1992-93 prices. The adult equivalence scale is also applied for the homogeneity of the

population. The study is confined to the welfare index proposed by Sen (1974) as a basis for analyzing welfare in Pakistan. This index takes into account both the size and distribution of income. It also presents the breakdown of income distribution data in the urban and rural sectors as well as for the country as a whole.

This study is organized into six chapters. After this introduction, Chapter 2 reviews the literature on income distribution. Chapter 3 discusses the methodology and data. Chapter 4 analyses inequality. Chapter 5 is devoted to the analyses of welfare. Chapter 6 summarizes and brings together the main conclusions of this study.

Chapter 2

REVIEW OF THE LITERATURE

A number of studies have been undertaken that analyzes inequality and welfare, which are reviewed here. These studies shed light on important aspects of the economy and are useful for policy making. In Pakistan most of the studies have focused on drawing the Lorenz Curve, estimating the Gini-coefficient, Theil's index, Atkinson index and sometime estimating the Pareto-coefficient as well. It has seen that the researchers in general have employed "Household Income and Expenditure Survey", in which intervals are not uniform.

(a) In General

Atkinson (1970) provided a theorem relating the social welfare function and the Lorenz curve. He showed that ranking of income distribution according to the Lorenz curve criterion is identical to the ranking implied by aggregate economic welfare regardless of the form of the welfare function of the individuals provided the Lorenz curve does not interact. One can always find two functions that will rank them differently.

Hirochman (1973) has discussed that if growth and equity of income distribution are two principal economic tasks facing a country, then these two should be solved subsequently or, in some cases, simultaneously with different institutional set up, otherwise these countries are exposed to disaster.

Sen (1974) divided income inequality into two broad classes. One he described as objective, or purely statistical measures of dispersion, such as the variance, the coefficient of variation, the Lorenz Curve and the Gini-coefficient. The other class he described as normative of income inequality.

Kakawani (1977) presented the concept of the Lorenz Curve technique, which was extended and generalized to study the relationship between the distribution of different economic variables. He called the generalized Lorenz curves as concentration curves.

Yitzhaki (1979) presented an interpretation of the Gini coefficient that was consistent with a well-known theory of attitudes to social inequality, the theory of relative deprivation. He quantified the concept of deprivation in a society, which could be represented by $//$ G, where G was the Gini coefficient and $//$ was the income that each person would have in a society ($/\hat{}$ is average income). In other words he said that $//$ (1-G) was a measure of the satisfaction of the society.

Shorrocks (1982) showed decomposition inequality indices as a mean of assessing the relative contributions of income components to total inequality. Therefore, in interpreting the results of empirical works one has to keep in mind that, the natural decomposition of the Gini index is one of the much possible decomposition.

(b) The Case of Pakistan

Haq (1964) study for income distribution is one of the earliest and is based on income tax data for the years 1947-48 to 1957-58. The author concluded that income distribution in Pakistan, is highly skewed but with a decline in the concentration ratio during the period under analysis.

Nasim (1973) analyzed inequality in consumption for household and population for the years, 1963-64, 1966-67, 1968-69 and 1971-72 by using HIES data. The study concluded that Gini-coefficients of expenditures as well as income have shown an increase in the inequalities in the year 1971-72.

Khandker (1973) estimated the Gini-coefficients of income for households, population and earners. The results showed that inequality of income was greater in the urban areas than in the rural areas. Inequality of wealth in the form of agriculture land holding was quite high, it was lower in irrigated area than in total area; the inequality was greater among owner farms than among tenant-farm or owner-cum-tenant farms. Inequality of wealth in the form of owner-occupied houses was low in the rural areas, and it was also not very high in the urban areas. Finally, there was also quite a high inequality of wealth in the form of corporate industrial assets.

Jeetun (1978) measured the trends in income inequalities in urban, niral and overall in Pakistan in order to find out whether economic growth had, in fact, fostered greater inequality for different years between 1963-64 and 1971-72. He employed several statistical measures and inferred whether inequality had increased on the basis of the tendencies exhibited by most of these measures. The three measures, the Gini coefficient, Kuznets measures, and the coefficient of variation all indicated an increase in inequality between 1963-64 and 1966-67, then a slight decline in inequality during 1968-69 and 1969-70 and a rise in equality in 1970-71 and 1971-72. All measures, except the relative mean deviations, have shown deterioration in inequality. He said that changes in income distribution are attributable to changes in the functional income distribution that take place as development proceeds apace. He concluded that the fruits of agricultural growth seemed to be more widely distributed than that of industrial development in urban areas, which were concentrated in a few hands.

Mujahid (1978) focused to highlight the methodological issues involved in the measurement of poverty and income inequalities. Estimating the Gini coefficient of income or expenditure either for household or population had no

meaning since the shares in total income or expenditure of households and population arranged by per capita income could not be determined. He analyzed that there was a direct correlation between household income and size of the household that has shown an inverse correlation between per capita income and size of household. He concluded that the Gini coefficients estimated on the basis of household would be higher than estimated on the basis of population.

Kemal (1981) reviewed studies on income distribution in Pakistan. He argued that very little attempt has been made to explain the level and changes in income inequalities and to decompose income inequalities due to occupation, sectors, and rural-urban, etc.

Chaudhry (1982) has investigated the legitimacy of the popular view that the Green Revolution has led to a magnification of income inequality in rural Pakistan. He concluded that the Green Revolution was actually responsible for reduction of income disparity between small and large farms, between farm and non-farm rural classes and between well-to-do and poor agricultural regions in Pakistan.

Cheema and Malik (1984) analyzed the effects of alternative distributions on the consumption and employment levels in Pakistan. Starting with the initial distribution of total disposable income they studied the implications of four different policies of income transfer from the richest X percent to the poorest Y percent households. The result showed that any income transfers favorable to the poor would have positive effects on consumption, social welfare, and employment.

Afridi, Asghar and Zaki (1984) analyzed that how the prevailing inflation affects the given distribution of incomes. They also evaluated whether the gap between the rich and poor increased over time. They concluded that the effect of inflation were highly non-egalitarian and contributed to increasing the existing inequalities. They also analyzed that in general the poor suffered a loss of income through high rates of inflation while the rich did not suffer any such loss.

Mahmood (1984) quantified the degree of income inequalities and analyzed the consequences of economic changes on income distribution at different points in time. He examined five inequality measures namely the Gini coefficient, the coefficient of variation, the standard deviation of logs of incomes, Theil's index and Atkinson's index to measure income inequality. In his opinion reliance on the use of a single measure could lead to erroneous conclusions. The analysis showed a declining trend in the income inequalities in both the rural and urban areas in Pakistan up to the year 1970-71 but they started increasing soon afterwards to those observed in the rural areas. The study concluded that all the industrial growth taking place in the urban areas had gone into the hands of the urban elite because wages had increased less rapidly than over all per capita income.

Kruijk and Leewan (1985) examined the incidence of poverty and inequality in Pakistan during the 1970s by using decomposition techniques. The study used the Theil Coefficient, the Gini coefficient, the coefficient of variation, and the standard deviation of logs of income for the measurement of income inequality. Further, the Theil Coefficient was decomposed into various factors. The analysis showed that inequality had increased both in urban and in rural areas in Pakistan during 1969-70 and 1979 and that according to all indicators inequality was higher in urban areas than in rural areas. The study used the Theil Coefficient to analyze (a) urban-rural inequality; (b) inequality among earners and among earners per household; and (c) inequality between and within occupational groups. The study also observed that remittances transmitted by migrant workers to their household have a profound impact on income inequality because it was not spread evenly among households.

Kruijk (1986) analyzed the incidence of inequality between and within urban and rural areas, between and within occupational groups in the four provinces of Pakistan. The main finding of the study was that not only the level, but also the structure of inequality, differed substantially among the provinces.

brcelawn (1988) studied to evaluate inferences of change in rural inequality by household income and expenditures for 1971-72 and 1979. His results suggested the distribution of income deteriorated noticeably more so than did the distribution of expenditure. He showed that there was over inequality when the per capita variable was used instead of household (income or expenditure) variables. He concluded that the economic reforms of the Bhutto regime were unsuccessful in improving income distribution.

Iqbal (1988) derived an alternative formula for the computation of expenditure elasticity from Kakawani's (1980) formulation of expenditure elasticity in which he had used the "Gini Index" to find the elasticity of consumption expenditure on a commodity with respect to total expenditure. He had suggested that another important measure of income inequality; namely the "coefficient of variation" could be used effectively to estimate the expenditure (income) elasticity. The formula derived here was conceptually identical to the Linear Expenditure System (LES) formula.

Ahmed and Ludlow (1989) estimated inequality for income and expenditure for the household by using coefficient of variation, logarithmic variance, the Gini-coefficient, Atkinson indices and the Lorenz curves for 1979 and 1984-85. The study explored that only little change in income inequality had taken place during 1979 and 1984-85. The estimates of coefficient of variation reflected the presence of very high incomes in rural areas of the NWFP, Balochistan and Sindh provinces. While examining the Atkinson indices, the study observed that there was a warring increasing in its values in rural district in the Punjab over 1979 to 1984-85 suggested a significant difference between districts. The observed pattern support the contention that

weather played a relatively greater role in determining changes in equality in the rain-fed regions, than in the irrigated heart land of the Punjab.

Malik (1993) analyzed the correlation between consumption (and income) per capita and poverty and inequality. He concluded that a high rank by poverty and a low rank by income or total expenditure were strongly and significantly correlated in each year, poverty and inequality were negatively correlated, though the statistical significance was not always strong and higher average income was significantly correlated with higher inequality.

Kemal (1994) examined the adjustment experience of Pakistan since the late seventies and its impact on efficiency and equity in the economy. The study concluded that the freeze on wages and slower growth of employment had led to deterioration in the personal income distribution through changes in the functional income distribution, during 1987-88 to 1990-91. The income inequality in the rural areas had increased because the elimiryition of subsidies on inputs tended to reduce the income of both the poor and the rich, but the increase in output prices to compensate for increasing input prices benefited the bigger landlords relatively more than the poor. The study also found that income inequalities had been accentuated by changes in the incidence of taxes during the structural adjustment period. In particular, the tax incidence on the poor has increased and it has declined on the rich. The study reached the generally held conclusion that the "Structural Adjustment Programme" has contributed towards efficiency but had adverse implication, for employment and equity.

Jaffri and Khattak (1995) got an insight into the structure of inequality by analyzing inter sectoral disparity on rural-urban basis. They compared inequality changes in urban and rural areas of Pakistan during 1979-1991. Based on the Gini-coefficient and income share of lowest 20 percent and highest 20 percent, which suggested that inequality was consistently higher in urban areas than in rural areas. The inequalities had decreased both in urban and rural areas during 1979-88. They also analyzed that the inequality had increased both in urban and rural areas during 1990-91.

On the basis of various studies reviewed, some striking features have drawn related income distribution in Pakistan.

1. Income inequality was more skewed in the urban sector than in the rural sector.
2. Inequalities in income distribution were more pronounced than in the distribution of consumption expenditure.
3. The effects of inflation were highly non-egalitarian and contributed to increase in the existing inequalities.
4. The "Structural Adjustment Programme" had adverse implication for employment and equity in the economy.
5. Green Revolution had led to an improvement in the income inequalities.

Generally speaking almost all the above studies related to income distribution in Pakistan have done on measuring income inequalities by using Gini-coefficient, Lorenz curves, Thiel's entropy measure, Pareto-coefficient, and coefficient of variations. Relatively very little attempt has been made to explain the level and the changes in income or expenditure inequalities and decompose income or expenditure inequalities by factor components. Similarly, hardly any study analyses properly levels of economic welfare, its elasticities and changes in economic welfare overtime. The present study is an attempt to overcome the above weakness by decomposing income and expenditure inequalities. Sen's welfare index is also applied for the first time on Pakistani data to measure economic welfare levels overtime. It has observed that no study has yet been drawn that considered the effects of both the inequality and growth on standards ofiliving. In this respect the present study is a significance step forward, as it will attempt to measure the affects of growth as well as inequality on household welfare levels.

Chapter 3

METHODOLOGY AND DATA

3.1 Methodology

This chapter examines methodological issues in the level and distribution of income, expenditure and in the measurement of welfare.

3.2 Measures of Welfare

A number of measures of inequality have been proposed in the literature. These measures fall into two classes, viz. positive measures, which make no explicit use of any concept of social welfare and normative measures, which are based on an explicit formulation of social welfare and the loss incurred from unequal distribution.

To arrive at a complete welfare ranking of distribution, one must use a single measure of welfare. Giving different weights to individuals with different incomes can derive such a measure. Suppose, in a society, there are n individuals who are arranged in ascending order of their income $X_1 \leq X_2 \leq \ldots \leq X_n$, then a welfare measure may be defined as a unique function of $X_1, X_2, \ldots X_n$, Sen (1974). Consider the following welfare function.

$$W = \sum_{i=i}^{n} *i v_i \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (i)$$

Where V_i is the weight given to a person with income X_i. So if $F_i = 1/n$ for each individual, then W is equal to average per capita income. To make W sensitive to inequality in the distribution, higher (lower) weights are given to individuals with lower (higher) incomes. Sen (1973) proposes that K_i is the weight given to the income of the ith person should be proportional to the number of persons who are at least as well off as i. From this proposition, Sen arrived at the welfare function:

$$W = \mu \,(1 - G) \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \text{---} \qquad (2)$$

Where p is the mean income of the society and G is the Gini-Coefficient. The parameter p only considers per capita income and ignores inequality whereas G considers inequality and ignores the level of income. The Sen's index combines both.

3.3 Welfare by Income and Expenditure Components

As per adult equivalent income or expenditure is the sum of several income or expenditure components, it is useful to decompose total welfare (and inequality) into various components. According to Foster (1985) the chosen measure should have five basic properties, (1) Pigon-Dalton transfer sensitivity, (2) symmetry, (3) mean independence, (4) population homogeneity, and (5) decomposability. Both the Gini index and Sen's index possess this property.

Suppose there are n income or expenditure components, μ is the mean income and μ_i is the mean of the ith component. Then it is obvious that

$$\mu = \sum_{i=1}^{n} \mu_i \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \quad (3)$$

and the disaggregation of the Gini index of income (or total expenditure) is written as (Kakwani 1980):

$$G = 1/\mu \sum_{i=1}^{n} \mu_i C_i \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \quad (4)$$

Where C_i is the concentration index of the ith income or expenditure component. The concentration index C_i is the same as the Gini index except that the ranking of individuals is by the total income (or expenditure) and not the ith income (or ith expenditure) component. As a result, the index can be negative. The concentration indices of an income (or expenditure) component measure how evenly or unevenly that income (or expenditure) component is distributed as compared to distribution of total income (or total expenditure). If C_i is greater (smaller) than G, it implies that the ith income or expenditure component is distributed more (less) unevenly as compare to total income or expenditure.

Equation (2) with (3) and (4) can then be used to express the total welfare as:

$$\Lambda = \sum_{i=1}^{n} \mu_i (1 - C_i) \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \quad (5)$$

Where W expressed the total welfare which is decomposed in terms of individual income or expenditure component; $\mu_i (1-C_i)$ being the contribution of the ith income or expenditure component to total welfare.

3.4. Elasticity of Total Welfare

To measure the elasticity of total welfare with respect to μ, the following expression have derived by Lemman and Yitzhaki (1985):

$$\eta_i = \frac{\mu_i(1-C_i)}{\mu(0-G)} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (6)$$

It implies that how the change in the ith income or expenditure component affects total welfare. In other words it shows that if μ_i increases by 1 percent then the total welfare increases by r_i percent.

Using Kakwani (1996), equation (6) can be decomposed into two parts in which the first term may be called the income effect and the second term, the inequality effect;

$$\eta_i = \frac{\mu_i}{M} + \frac{tt(1-C_i)-(1-G)}{M(0-G)} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (7)$$

The inequality effect measures the gain or loss in welfare as a result of income distribution. If the ith income component is more evenly distributed than the overall income, C_i would be less than G and the effect of this income component on welfare would be favorable. The income effect term in the above equation shows that a positive income from the ith source contributes to welfare and higher the level of this income, the higher will be the level of welfare. If the increase in the ith income component favors the poor more than the rich, the inequality component will be positive, otherwise it will be negative.

3.5. Progressivity Index

The progressivity index proposed in Kakwani (1996), is given by:

$$P_i = \frac{\mu_i(0-C_i)-(0-G)/\mu(0-G)}{M_i i M} = \frac{0-C_i)-(0-G)}{(1-G)} = \frac{(G-C_i)}{0-G)} \qquad \dots \qquad (8)$$

If the value of P_i is positive it implies that the ith income or expenditure component is progressive because in this case the ith component is more evenly distributed than the overall distribution and, hence it favors the poor. Likewise a negative value of P_i implies that the ith component is regressive. In the borderline case the ith income or expenditure component is distributed in proportion to total income or expenditure. Therefore C_i will be equal to G and, hence, the progressivity index will be equal to zero. It indicates that the effect of an increase in the ith income or expenditure component favors neither the poor nor the rich. This progressivity index may be devised as the optimum tax or expenditure policy. For maximizing a country's total welfare with minimum cost it gives a quantitative basis.

3.6. Trends in Welfare

To study trends in welfare level over time, it attempts to describe changes

in welfare in terms of income or expenditure components. Suppose the average rth income or expenditure component changes from μ_i to μ_i' which may be accompanied by a change in the concentration index from C_i to C_i^* ,then the effect of such changes in all the income or expenditure components on total welfare is:

$$\mathbf{fF}^* - \mathbf{\Lambda} = \sum_{i=1}[\pi_i^*(1 - C_i^*) - \mu_i(1 - C_i)] \qquad \ldots \qquad \ldots \qquad \ldots \quad (9)$$

The concentration of the rth income or expenditure component in the total change in welfare is given by μ_i^* $(1-C_i^*)$ - μ_i $(1-C_i)$.

The total change in welfare may further be decomposed into two components, one due to a change in the means of income or expenditure components and second due to a change in the concentration of the income or expenditure components. Thus each term in Equation (9) can be written as

$$M_i^*(1 - C_i^*) - \mu_i(1 - C_i) = \pounds(M_i^* - A_I)(C_i - C_i^*) + (1 - C_i) + $$
$$Y[(Ci - C_i^*) - (\backslash - Ci)(M_i^* + Mi) \qquad \ldots \quad (10)$$

Substituting this equation into (9), gives

$$W^* - W = \backslash l 2\underset{l=i}{\pm}(M_i^* - \textbf{aa} - C_i)]+1/\underset{l=1}{\textbf{21}}[\textbf{a} - \textbf{c}_i) - (i - \textbf{c}_i)](\mu_i^* + Mi) \ldots (11)$$

All the above mentioned measures will be applied for the analysis of this study. This completes the description of methodology

3.7. Data

This study covers the period from 1979 to 1992-93 using data from the "Household Income and Expenditure Surveys" (HIES) [Government of Pakistan]. The data provides information on mean income and mean total expenditure for each income group. Information on the sources of income and expenditure on various categories of consumer goods and services are available in percentages. All these percentages are converted into absolute magnitudes.

To compare inequality and welfare across different time periods one needs to adjust the distribution given in current prices for price changes over time. The official consumer price indices are used to convert all the data to 1992-93 prices. To account for the size and age composition of households, all the income and expenditure statistics are also converted on the OECD(1982) equivalent scale. Both income and expenditure components are analyzed as indicators of economic welfare of a household

To study the contribution of various income sources and expenditure categories in the overall income and expenditure inequality and welfare level,

following factor components are considered as given in HIES.

3.8. Sources of Disposable Income

    (i) Wages and salaries
    (ii) Self-employment (farming): crop production, livestock and other activities;
    (iii) Property income;
    (iv) Owner occupied houses;
    (v) Social insurance benefits (including pension); and
    (vi) Gift and assistance (gifts, assistance, foreign remittances, domestic remittances and *Zakat*).

3.9 Categories of Expenditure

On the expenditure side, we decompose consumption expenditure as follows.

    (i) Food expenditure;
    (ii) Clothing and footwear;
    (iii) Furniture, fixture and furnishing;
    (iv) Fuel and lighting;
    (v) Housing;
    (vi) **Health;**
    (vii) Transport;
    (viii) Cleaning and Laundry;
    (ix) Education; and
    (x) Miscellaneous.

The first four components are further decomposed into various subgroups. These may be noted, for instances, from Table 4.2.

Chapter 4

TRENDS IN INEQUALITY (1979 TO 1992-93)

4.1. Introduction

In this chapter, patterns and trends in income and expenditure inequality have been examined. The study has also looked into the contribution of various income sources in the overall income inequality. This analysis will be useful in studying the sources of income, which is more or less progressive as compared to the overall income. In this context, a progressivity index is then calculated as already discussed in Chapter 3. A similar analysis is conducted to compare inequality in total household consumption expenditure and concentration of expenditure within various categories of consumer goods and services.

4.2. Analyses of Inequality in Pakistan (1979 to 1992-93)

In this section, disparity in the distribution of real per adult equivalent income and expenditure in Pakistan during 1979 to 1992-93 has been explored.

The estimated values of the Gini index for total income and its components over the period of thirteen years (1979 to 1992-93) are shown in Table 4.1. The results are quite striking. The inequality declined monotonically

Table 4.1

Decomposition of Inequality by Factor Income Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Disposable Income	0.28	0.18	0.25	0.28	0.21	0.26	0.25	0.20	0.23
Wages, Salaries	0.20	0.03	0.22	0.18	0.02	0.19	0.17	0.04	0.18
Self Employment	0.31	0.19	0.21	0.31	0.25	0.25	0.25	0.22	0.20
Property	0.53	0.37	0.46	0.52	0.50	0.50	0.52	0.38	0.44
Owner House	0.31	0.05	0.30	0.32	0.06	0.29	0.28	0.07	0.26
Sodal+Pension	0.21	0.11	0.20	0.31	0.14	0.31	0.33	0.14	0.27
Gift+Assistance.	0.15	0.26	0.21	0.22	0.12	0.17	0.30	0.04	0.23
Other Sources	0.62	0.63	0.69	0.46	0.41	0.42	0.47	0.39	0.41
	1986–87			1987–88			1992–93		
Disposable Income	0.25	0.17	0.23	0.26	0.17	0.23	0.30	0.26	0.30
Wages, Salaries	0.26	0.09	0.24	0.19	0.11	0.26	0.19	0.10	0.23
Self Employment	0.22	0.17	0.18	0.25	0.16	0.18	0.38	0.36	0.35
Property	0.58	0.44	0.52	0.53	0.38	0.43	0.59	0.61	0.60
Owner House	0.28	0.07	0.26	0.32	0.07	0.29	0.32	0.04	0.23
Sodal+Pension	0.39	0.14	0.34	0.36	0.14	0.31	0.42	0.39	0.43
Gift+ Assistance	0.34	0.27	0.36	0.37	0.22	0.35	0.27	0.19	0.25
Other Sources	0.41	0.30	0.32	0.29	0.28	0.31	0.42	0.30	0.33

between 1979 to 1986-87, but increased between 1987-88 to 1992-93 in urban sector. In the rural sector, on the other hand, the inequality increased between 1979 to 1984-85 and then decreased till 1987-88 and then it again increased in 1992-93. It is also observed that income inequality is more skewed in urban sector than in rural sector. This can be explained as the labor participation and employment rates in the rural areas are consistently higher than in the urban areas, it provides the explanation for better income distribution in the rural areas, through average income of household, largely on account of under employment in the rural areas is considerably less than that of urban areas. As regards to intra rural area income distribution, the causes of inequality are due to small-holdings by the majority of the population and larger owner operated farms (Jafri 1995).

At the Pakistan level overall inequality increased during 1979 to 1992 but between this period fluctuation was observed showing higher growth of GDP in 1984-85 to 19887-88 period was accompanied with falling income inequalities, the Gini-coefflcient fell from 0.28 in 1984-85 to 0.26 in 1987-88. On the other hand, slower growth of GDP in 1987-88 to 1992-93 was accompanied with rising income inequalities, the Gini-coefficient increased to 0.30. These changes in income inequalities may be due to inflationary tendencies, regressive tax structure system, high rate of unemployment, drastic fall in remittances, freeze on wages and salaries and structure of public expenditure etc. It was stated that 22 industrial houses in Pakistan owned 66 percent of industrial assets and 87 percents of banking and insurance, which highlighted the inequalities in industrial income and assets (Haq,1997). The "Structural Adjustment Program" has also resulted in declining poverty and rising inequality (Kemal, 1995).

The total disposable income was also decomposed into seven components. The concentration indices of an income component measures how evenly or unevenly that component is distributed as compared to the distribution of per adult equivalent income. In the urban area it can be seen that in 1979 the concentration indices of self-employment, property income, owner occupied houses and income from other sources are higher than the Gini index of the overall per adult equivalent income. In rural area during this period concentration indices of self-employment, property income, gifts and other income sources are greater than the Gini index of the total per adult equivalent income which implies that income from these sources are unevenly distributed in favor of the richer families. Thus, reflecting concentration of agriculture assets in few rural elite.

In the urban area in the following years most of the concentration indices of income components are higher than the Gini index. Inequality in wages and salaries has been observed to be much higher in the urban sector than in the rural sector. This has been so primarily because of the much greater heterogeneity of urban labor force. The concentration index of wages and salaries, which is the largest source of income, has been smaller than the Gini index of total income

between 1979 to 1986-87, but increased between 1987-88 to 1992-93 in urban sector. In the rural sector, on the other hand, the inequality increased between 1979 to 1984-85 and then decreased till 1987-88 and then it again increased in 1992-93. It is also observed that income inequality is more skewed in urban sector than in rural sector. This can be explained as the labor participation and employment rates in the rural areas are consistently higher than in the urban areas, it provides the explanation for better income distribution in the rural areas, through average income of household, largely on account of under employment in the rural areas is considerably less than that of urban areas. As regards to intra rural area income distribution, the causes of inequality are due to small-holdings by the majority of the population and larger owner operated farms (Jafri 1995).

At the Pakistan level overall inequality increased during 1979 to 1992 but between this period fluctuation was observed showing higher growth of GDP in 1984-85 to 19887-88 period was accompanied with falling income inequalities, the Gini-coefficient fell from 0.28 in 1984-85 to 0.26 in 1987-88. On the other hand, slower growth of GDP in 1987-88 to 1992-93 was accompanied with rising income inequalities, the Gini-coefficient increased to 0.30. These changes in income inequalities may be due to inflationary tendencies, regressive tax structure system, high rate of unemployment, drastic fall in remittances, freeze on wages and salaries and structure of public expenditure etc. It was stated that 22 industrial houses in Pakistan owned 66 percent of industrial assets and 87 percents of banking and insurance, which highlighted the inequalities in industrial income and assets (Haq,1997). The "Structural Adjustment Program" has also resulted in declining poverty and rising inequality (Kemal, 1995).

The total disposable income was also decomposed into seven components. The concentration indices of an income component measures how evenly or unevenly that component is distributed as compared to the distribution of per adult equivalent income. In the urban area it can be seen that in 1979 the concentration indices of self-employment, property income, owner occupied houses and income from other sources are higher than the Gini index of the overall per adult equivalent income. In rural area during this period concentration indices of self-employment, property income, gifts and other income sources are greater than the Gini index of the total per adult equivalent income which implies that income from these sources are unevenly distributed in favor of the richer families. Thus, reflecting concentration of agriculture assets in few rural elite.

In the urban area in the following years most of the concentration indices of income components are higher than the Gini index. Inequality in wages and salaries has been observed to be much higher in the urban sector than in the rural sector. This has been so primarily because of the much greater heterogeneity of urban labor force. The concentration index of wages and salaries, which is the largest source of income, has been smaller than the Gini index of total income

except in 1986-87. In the rural areas most of the income components are not as unevenly distributed as in the urban area. This is because the overall degree of inequality in total income has been higher in the urban areas than in the rural areas.

Next is a discussion on the inequality of total consumption expenditure and its components. In Table 4.2 inequality in food expenditure is greater in the urban sector than in the mral sector during the analyses period. In the urban areas it is observed that concentration indices for meat and fish, poultry, milk, fruits and dry fruits and miscellaneous expenditure is greater than the inequality in total expenditure. This implies that the consumption of these items is more unevenly distributed in favor of the rich classes due to higher income inequality. In the mral areas the concentration indices are higher for rice, milk, meat and fish, poultry, fruits and dry fruits and miscellaneous expenditure because most of these products belong to the home production groups.

The non-food expenditure items generally appear to be more unevenly distributed than the overall expenditure. In urban sector, the concentration indices for clothing, housing, gas, electricity, furniture and fixture, transport and education are higher than the Gini index for total consumption expenditure. It shows that these expenditures are unevenly distributed in favor of relatively more rich households during the analyses period. In mral areas, the indices of expenditure components are not so higher as in urban area. The concentration indices for gas, electricity, furniture and fixture, transport and education are higher than the Gini index of total consumption expenditure.

For overall Pakistan concentration indices for cereals, clothing and footwear, fuel, and kerosene oil are less than Gini index of total expenditure for most of the years. This shows that these consumption expenditure components are distributed over the total expenditure in favor of the relatively poor households

4.3. A Progressivity Index by Income and Expenditure Components

A progressivity index of an income component, given by Equation (8) in chapter 3, is the ratio of the inequality component to the income component. A positive value of this index implies that ith income component is progressive while the negative value means that the income component is regressive. Thus, the magnitude of this index indicates whether the increase in an income component favors the poor or the rich.

According to Table 4.3, this index suggests that income component of wages and salaries is progressive in 1979, 1984, 1985 and 1992 in all sectors and in overall Pakistan, indicating that any policy to increase wages and salaries will favor the poor families more than rich families. In 1986-87 this component is regressive in urban sector and in overall Pakistan, because of high growth of wages in the large scale of manufacturing sector.

Table 4.2

Decomposition of Inequality by Factor Expenditure Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Total Expenditure	0.22	0.12	0.18	0.23	0.15	0.21	0.22	0.14	0.18
Food	0.25	0.12	0.18	0.15	0.10	0.13	0.13	0.10	0.12
Cereals	0.16	0.07	0.09	0.04	0.05	0.03	0.03	0.04	0.02
Wheat	0.12	0.05	0.06	0.00	0.04	0.01	−0.01	0.01	−0.01
Rice	0.28	0.11	0.19	0.16	0.09	0.11	0.15	0.15	0.15
Other Cereals	0.14	0.15	0.16	0.14	0.08	0.04	0.19	0.09	0.04
Pulses	0.14	0.03	0.08	0.04	−0.04	0.04	0.04	0.02	0.03
Milk	0.27	0.17	0.19	0.18	0.16	0.15	0.15	0.15	0.14
Edible Oils	0.19	0.03	0.15	0.08	−0.01	0.05	0.07	−0.01	0.05
Meat & Fish	0.34	0.19	0.31	0.27	0.16	0.27	0.25	0.17	0.26
Poultry	0.58	0.30	0.44	0.47	0.33	0.38	0.42	0.30	0.34
Fruits *Si* Dry fruits	0.43	0.28	0.40	0.31	0.21	0.31	0.28	0.20	0.29
Vegetables	0.21	0.07	0.15	0.09	0.04	0.08	0.05	0.04	0.06
Spices	0.20	0.07	0.14	0.11	0.05	0.10	0.09	0.04	0.08
Gur & Sugar	0.21	0.15	0.17	0.11	0.12	0.12	0.10	0.10	0.10
Tea *Si* Coffee	0.21	0.10	0.16	0.19	0.09	0.16	0.10	0.07	0.09
Tobacco	0.29	0.13	0.24	0.14	0.12	0.15	0.15	0.11	0.16
Miscellaneous	0.40	0.41	0.44	0.22	0.20	0.31	0.26	0.23	0.30
Cloth *Si* Footwear	0.19	0.11	0.15	0.16	0.11	0.14	0.17	0.11	0.14
Clothing	0.21	0.12	0.18	0.16	0.11	0.13	0.17	0.11	0.14
Ready & sec. Garm	0.15	0.09	0.11	0.19	0.12	0.16	0.16	0.10	0.14
Footwear	0.15	0.09	0.13	0.17	0.11	0.18	0.16	0.13	0.14
Housing	0.32	0.10	0.32	0.28	0.13	0.30	0.28	0.12	0.29
Fuel	0.11	0.08	0.10	0.11	0.09	0.12	0.11	0.08	0.10
Kerosene Oil	−0.17	−0.13	−0.10	−0.01	0.04	0.03	−0.05	0.01	0.01
Gas	0.26	−0.05	0.42	0.36	0.45	0.54	0.34	0.51	0.53
Electricity	0.06	0.20	0.22	0.24	0.24	0.35	0.23	0.26	0.36
Furniture *Si* Fixture	0.38	0.28	0.33	0.34	0.23	0.28	0.33	0.20	0.26
Fur.Fix.Furnishing	0.44	0.25	0.34	0.48	0.31	0.37	0.42	0.32	0.36
Kitchen.Eqp.	0.60	0.56	0.61	0.52	0.31	0.47	0.49	0.29	0.45
Dur *Si* Ndur	0.33	0.26	0.29	0.28	0.20	0.24	0.28	0.17	0.21
Health	0.19	0.11	0.18	0.18	0.14	0.18	0.18	0.14	0.18
Transport	0.46	0.57	0.43	0.48	0.42	0.50	0.47	0.36	0.56
Clean & Laundry	0.14	0.05	0.08	0.19	0.13	0.18	0.21	0.13	0.28
Education	0.48	0.47	0.56	0.45	0.42	0.51	0.44	0.36	0.58
Miscellaneous	0.39	0.27	0.34	0.35	0.34	0.35	0.35	0.30	0.31
Total Expenditure	0.22	0.13	0.19	0.21	0.12	0.18	0.21	0.10	0.16
Food	0.14	0.09	0.11	0.12	0.09	0.11	0.13	0.08	0.11
Cereals	0.03	0.05	0.02	0.02	0.04	0.03	0.02	0.03	0.02
Wheat	−0.01	0.02	−0.01	−0.02	0.01	0.00	−0.01	0.01	0.00
Rice	0.15	0.17	0.15	0.16	0.13	0.14	0.11	0.09	0.10
Other Cereals	0.18	0.19	0.13	0.13	0.22	0.17	0.15	0.02	0.03
Pulses	0.03	0.02	0.01	0.02	0.01	0.02	0.05	0.05	0.05
Milk	0.16	0.13	0.13	0.14	0.14	0.13	0.14	0.14	0.13
Edible Oils	0.06	0.01	0.04	0.06	−0.01	0.05	0.07	0.00	0.04
Meat *Si* Fish	0.25	0.16	0.24	0.22	0.15	0.24	0.25	0.18	0.25
Poultry	0.45	0.28	0.35	0.27	0.30	0.35	0.34	0.19	0.28
Fruits *Si* Dry fruits	0.29	0.19	0.27	0.26	0.17	0.26	0.28	0.20	0.28
Vegetables	0.06	0.04	0.06	0.04	0.04	0.06	0.07	0.03	0.05
Spices	0.08	0.04	0.07	0.07	0.04	0.07	0.09	0.04	0.07
Gur *Si* Sugar	0.08	0.09	0.08	0.07	0.08	0.08	0.08	0.06	0.06
Tea & Cofree	0.11	0.07	0.08	0.10	0.05	0.08	0.16	0.05	0.10
Tobacco	0.16	0.13	0.16	0.14	0.05	0.11	0.11	0.10	0.12
Miscellaneous	0.27	0.16	0.31	0.23	0.19	0.29	0.22	0.10	0.28
Cloth *Si* Footwear	0.16	0.09	0.13	0.14	0.08	0.11	0.19	0.10	0.14
Clothing	0.17	0.09	0.13	0.13	0.07	0.10	0.17	0.09	0.12
Ready *Si* sec. Garm.	0.18	0.09	0.10	0.17	0.09	0.13	0.24	0.09	0.16
Footwear	0.15	0.09	0.14	0.13	0.08	0.11	0.16	0.12	0.14
Housing	0.27	0.10	0.28	0.30	0.11	0.31	0.28	0.06	0.22
Fuels	0.11	0.07	0.09	0.12	0.07	0.10	0.10	0.03	0.08
Kerosene Oil	−0.06	0.00	0.00	−0.08	−0.01	−0.02	0.11	0.11	0.13
Gas	0.34	0.45	0.51	0.33	0.54	0.53	0.43	0.51	0.58
Electricity	0.24	0.19	0.31	0.27	0.19	0.35	0.37	0.31	0.22
Furniture & Fixture	0.30	0.19	0.24	0.31	0.19	0.25	0.35	0.22	0.29
Fur, Fix, Furnishing	0.42	0.25	0.32	0.45	0.28	0.35	0.46	0J3	0.39
Kitchen ,Eqp	0.44	0.37	0.44	0.52	0.32	0.46	0.53	0.42	0.53
Dur *Sc* NDur	0.25	0.16	0.19	0.24	0.16	0.19	0.29	0.18	0.23
Health	0.19	0.13	0.17	0.14	0.15	0.16	0.18	0.08	0.11
Transport	0.49	0.33	0.41	0.44	0.26	0.41	0.41	0.23	0.36
Clean & Laundry	0.20	0.13	0.18	0.17	0.13	0.17	0.41	0.23	0.36
Education	0.29	0.40	0.50	0.43	0.38	0.49	0.19	0.08	0.16
Miscellaneous	0.37	0.28	0.31	0.35	0.26	0.29	0.33	0.28	0.39

Table 4.3

Progressivity Index by Income Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Disposable Income									
Wages Salaries	0.12	0.18	0.04	0.13	0.24	0.10	0.11	0.19	0.06
Self Employment	–0.04	–0.01	0.05	–0.05	–0.04	0.01	0.00	–0.03	0.04
Property	–0.35	–0.23	–0.28	–0.33	–0.36	–0.33	–0.36	–0.22	–0.28
Owner House	–0.03	0.16	–0.07	–0.06	0.19	–0.03	–0.04	0.15	–0.04
Social+Pension	0.10	0.09	0.07	–0.05	0.09	–0.06	–0.11	0.07	–0.05
Gift+Assist.	0.19	–0.09	0.05	0.07	0.11	0.12	–0.07	0.19	0.00
Other Sources	–0.47	–0.55	–0.59	–0.25	–0.25	–0.21	–0.29	–0.24	–0.24
	1986–87			1987–88			1992–93		
Disposable Income									
Wages Salaries	–0.02	0.11	–0.02	0.09	0.07	–0.04	0.16	0.21	0.10
Self Employment	0.04	0.00	0.06	0.01	0.00	0.06	–0.12	–0.14	–0.07
Property	–0.43	–0.32	–0.38	–0.36	–0.25	–0.26	–0.41	–0.47	–0.44
Owner House	–0.04	0.13	–0.05	–0.08	0.12	–0.08	–0.03	0.30	0.10
Social+Pension	–0.19	0.04	–0.15	–0.14	0.03	–0.10	–0.17	–0.18	–0.19
Gift+Assist.	–0.12	–0.12	–0.17	–0.15	–0.06	–0.16	–0.18	0.09	0.07
Other Sources	–0.21	–0.15	–0.11	–0.04	–0.13	–0.10	–0.04	–0.29	–0.37

In the case of income from self-employment we observed that it is regressive in 1979, 1984-85, 1985-86 and in 1992-93 in both sectors, showing that redistribution of income will favor the rich families more as compare to the poor families because agriculture assets are in the hands of rural elite. This can be verified from Zaidi (1993) that household with head classified as self-employed have highest poverty rates. We have zero values of the progressivity index for self-employment income in 1985-86 in the urban sector and in 1986-87 and 1987-88 in the rural. In this case, the income component is distributed in proportion to total income then C, will be equal to G and hence, the progressivity index equal to zero, indicating that the effect of an increase in the income component favors neither the poor nor the rich.

Property income is regressive throughout the analyses period in all sectors and for overall Pakistan showing that income from this component is mostly concentrated in rich families. As far as income from owner occupied house is concerned, it is progressive in rural sectors and regressive in urban sector and for overall Pakistan from 1979 to 1992-93.

Income from social insurance benefits including pension is progressive in 1979 and regressive in 1992-93. Between these two periods it is regressive in urban sector and for overall Pakistan and progressive in rural sector. Gifts and assistance have revealed progressivity in 1984-85 and regressivity in 1986-87 to 1987-88 in all sectors and for overall Pakistan.

For the progressivity of income transfers the system of *Zakat* and *Ushr* and *Bait-ul-Mal* have been instituted for the poor section of the society. However, the impact of these measures have been relatively small because the number of beneficiaries as compared to the number of the poor is small, and also the government has been unable to collect sufficient amount of *Zakat* revenue. It is estimated that if all those liable to pay *Zakat* on Fixed and Saving accounts have paid the *Zakat*, the yield could have been Rs.4,762 million (Amjad, 1997). Other sources are continuously regressive between 1979 and 1987-88 and progressive in 1992-93 in rural and urban counterparts and for overall Pakistan. The trend of progressivity shows that the income component is concentrated among the poor families more than the rich families. In the same way, the trend of regressivity indicates that income component is concentrated among rich families and any positive change in ith income component will favor more rich families than the poor families.

Turning to expenditure side, it is observed from Table 4.4 that the food components are the most progressive expenditure items. The components of food which include, milk, meat and fish, poultry, fruits and miscellaneous items are generally regressive and their consumption is mostly concentrated among rich families in urban, rural and overall Pakistan. The table also indicates that clothing and footwear and its components are progressive thus favoring the poor. The energy items gas and electricity, durable goods like furniture and fixture and their components and transport are highly regressive, imply that the consumption of these items is mostly concentrated among the rich families.

The expenditure on education has also been regressive till 1987-88 then it becomes progressive. Thus, while in 1980's the expenditure on education is more concentrated among rich households than the concentration of total consumption expenditure, the trends has reversed in 1992-93. Thus, when formulating educational policy, public expenditure should be concentrated on primary education because the rich families prefer to send their children to somewhat expensive private primary schools. So it can be safely assumed that public expenditure on primary education benefits mainly the poor, whereas university education hardly benefits the lower income groups due to lack of resources and the relatively high opportunity cost (Amjad, 1997). In case of health, the progressive index is positive for all the periods. Thus, expenditure on health is not as much concentrated among the rich families as is the total consumption expenditure. As far as public expenditure on health is concerned it is more concentrated on urban hospitals rather than rural health centers, and basic health units, etc.

Table 4.4

Progressivity Index by Expenditure Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Total Expenditure	0	0	0	0	0	0	0	0	0
Food	-0.05	0.00	0.00	0.10	0.06	0.10	0.11	0.05	0.22
Cereals	0.07	0.06	0.12	0.25	0.12	0.22	0.24	0.12	0.36
Wheat	0.12	0.08	0.15	0.30	0.14	0.24	0.29	0.15	0.40
Rice	-0.08	0.01	0.00	0.09	0.08	0.12	0.08	-0.02	0.18
Other Cereals	0.10	-0.03	0.03	0.11	-0.09	0.20	0.04	0.06	0.33
Pulses	0.10	0.10	0.12	0.23	0.14	0.21	0.23	0.14	0.35
Milk	-0.07	-0.05	0.00	0.06	0.00	0.07	0.08	-0.02	0.20
Edible Oils	0.04	0.10	0.04	0.19	0.20	0.19	0.19	0.17	0.32
Meat & Fish	-0.15	-0.08	-0.16	-0.05	-0.01	-0.08	-0.04	-0.04	0.02
Poultry	-0.46	-0.21	-0.31	-0.31	-0.21	-0.22	-0.26	-0.18	-0.08
Fruits & Dry fruits	-0.28	-0.19	-0.26	-0.11	-0.07	-0.13	-0.09	-0.07	-0.01
Vegetables	0.01	0.06	0.04	0.17	0.14	0.16	0.21	0.12	0.31
Spices	0.03	0.06	0.05	0.15	0.13	0.14	0.16	0.12	0.28
Gur & Sugar	0.01	-0.03	0.02	0.15	0.04	0.11	0.15	0.04	0.25
Tea & Coffee	0.01	0.03	0.03	0.04	0.08	0.06	0.15	0.09	0.26
Tobacco	-0.09	0.00	-0.07	0.12	0.04	0.07	0.09	0.03	0.17
Miscellaneous	-0.24	-0.32	-0.32	0.00	-0.06	-0.13	-0.05	-0.10	-0.03
Cloth & Footwear	0.04	0.02	0.04	0.08	0.05	0.08	0.07	0.03	0.19
Clothing	0.01	0.00	0.01	0.09	0.06	0.09	0.06	0.03	0.19
Ready & sec. Garm	0.09	0.04	0.09	0.05	0.04	0.05	0.07	0.05	0.20
Footwear	0.09	0.04	0.06	0.08	0.05	0.03	0.08	0.01	0.19
Housing	-0.13	0.02	-0.16	-0.07	0.03	-0.11	-0.08	0.03	-0.02
Fuel	0.14	0.05	0.11	0.15	0.08	0.11	0.14	0.07	0.25
Kerosene Oil	0.50	0.28	0.35	0.30	0.14	0.23	0.34	0.15	0.38
Gas	-0.05	0.20	-0.29	-0.17	-0.35	-0.42	-0.16	-0.43	-0.35
Electricity	0.20	-0.09	-0.05	-0.01	-0.10	-0.19	-0.02	-0.14	-0.11
Furniture & Fixture	-0.21	-0.18	-0.18	-0.15	-0.09	-0.10	-0.14	-0.07	0.02
Fur.Fix.Furnishing	-0.28	-0.15	-0.19	-0.33	-0.18	-0.21	-0.25	-0.21	-0.12
Kitchen.Eqp	-0.49	-0.50	-0.52	-0.39	-0.18	-0.34	-0.35	-0.18	-0.24
Dur & NDur	-0.14	-0.16	-0.14	-0.06	-0.05	-0.04	-0.08	-0.03	0.10
Health	0.04	0.01	0.01	0.06	0.02	0.04	0.05	0.00	0.14
Transport	-0.31	-0.51	-0.30	-0.33	-0.32	-0.37	-0.33	-0.25	-0.39
Clean & Laundry	0.10	0.08	0.13	0.05	0.03	0.03	0.01	0.01	0.00
Education	-0.34	-0.40	-0.46	-0.30	-0.31	-0.38	-0.29	-0.26	-0.42
Miscellaneous	-0.22	-0.17	-0.19	-0.17	-0.22	-0.18	-0.17	-0.19	-0.05
Total Expenditure	0	0	0	0	0	0	0	0	0
Food	0.10	0.05	0.09	0.12	0.04	0.09	0.10	0.02	0.07
Cereals	0.24	0.10	0.21	0.24	0.09	0.19	0.24	0.09	0.17
Wheat	0.29	0.13	0.25	0.30	0.13	0.23	0.28	0.10	0.20
Rice	0.09	-0.04	0.04	0.07	-0.01	0.05	0.13	0.01	0.07
Other Cereals	0.04	-0.06	0.07	0.10	-0.11	0.02	0.08	0.09	0.16
Pulses	0.25	0.13	0.22	0.24	0.13	0.20	0.21	0.06	0.13
Milk	0.07	0.00	0.08	0.09	-0.02	0.06	0.09	-0.04	0.04
Edible Oils	0.19	0.15	0.18	0.19	0.16	0.17	0.18	0.11	0.14
Meat & Fish	-0.05	-0.03	-0.07	-0.02	-0.03	-0.07	-0.05	-0.08	-0.11
Poultry	-0.29	-0.17	-0.20	-0.07	-0.20	-0.20	-0.16	-0.09	-0.15
Fruits & Dry fruits	-0.10	-0.07	-0.10	-0.07	-0.05	-0.10	-0.09	-0.11	-0.14
Vegetables	0.20	0.11	0.16	0.22	0.09	0.15	0.18	0.09	0.14
Spices	0.17	0.11	0.14	0.18	0.10	0.14	0.15	0.07	0.11
Gur & Sugar	0.17	0.05	0.14	0.18	0.05	0.13	0.17	0.05	0.12
Tea & Coffee	0.14	0.08	0.13	0.14	0.08	0.12	0.07	0.06	0.07
Tobacco	0.08	0.00	0.04	0.09	0.08	0.09	0.13	0.01	0.06
Miscellaneous	-0.07	-0.03	-0.15	-0.02	-0.07	-0.13	-0.01	0.00	-0.14
Cloth & Footwear	0.08	0.05	0.08	0.09	0.05	0.09	0.03	0.01	0.03
Clothing	0.06	0.05	0.07	0.10	0.06	0.10	0.05	0.01	0.05
Ready & sec. Garm	0.05	0.05	0.11	0.05	0.04	0.07	-0.04	0.01	0.01
Footwear	0.09	0.04	0.07	0.10	0.04	0.09	0.06	-0.01	0.03
Housing	-0.07	0.03	-0.11	-0.12	0.02	-0.16	-0.08	0.05	-0.07
Fuel	0.14	0.07	0.12	0.12	0.06	0.10	0.15	0.08	0.10
Kerosene Oil	0.36	0.15	0.24	0.37	0.16	0.25	0.12	-0.01	0.04
Gas	-0.16	-0.37	-0.40	-0.15	-0.48	-0.42	-0.27	-0.45	-0.50
Electricity	-0.03	-0.07	-0.15	-0.07	-0.08	-0.21	-0.20	-0.23	-0.07
Furniture & Fixture	-0.11	-0.07	-0.06	-0.13	-0.08	-0.08	-0.18	-0.13	-0.15
Fur.Fix.Furnishing	-0.26	-0.14	-0.16	-0.30	-0.18	-0.21	-0.31	-0.25	-0.27
Kitchen.Eqp	-0.28	-0.27	-0.31	-0.39	-0.22	-0.34	-0.40	-6.35	-0.44
Dur & NDur	-0.05	-0.04	0.00	-0.03	-0.04	-0.01	-0.10	-0.09	-0.08
Health	0.03	0.00	0.03	0.10	-0.03	0.03	0.04	0.02	0.06
Transport	-0.35	-0.23	-0.27	-0.29	-0.15	-0.28	-0.25	-0.14	-0.24
Clean & Laundry	0.02	0.00	0.01	0.05	-0.01	0.02	-0.25	-0.14	-0.24
Education	-0.09	-0.31	-0.38	-0.28	-0.29	-0.38	0.02	0.03	0.01
Miscellaneous	-0.19	-0.17	-0.14	-0.17	-0.16	-0.14	-0.15	-0.20	-0.27

Chapter 5

TRENDS IN WELFARE (1979 TO 1992-93)

5.1. An Analysis of Per Adult Equivalent Welfare by Income and Expenditure Components

In this chapter, individual welfare by income and expenditure components using the welfare index proposed by Sen (1974) has been analyzed. It is a single measure of welfare given by equation (5) in chapter III, which takes into account both the size and the distribution of income. The estimates of this measure are presented in Table 5.1 and 5.2.

It is evident from the Table 5.1 that during the period 1979 and 1992-93 the welfare level has increased in the two sectors and in Pakistan. The welfare level from disposable income has been greater in magnitude in the urban sector than in the rural sector and in Pakistan during the analysis period. We have observed seven components of income. In 1979 wages and salaries have contributed more in the urban sector than in the rural sector and overall Pakistan. Self-employment has contributed higher level of welfare for the rural sector than the urban and overall Pakistan, whereas welfare from owner occupied house has contributed more to welfare in the urban sector than in the rural sector. Property income, social insurance and pension, gift and assistance and other sources of income have contributed insignificantly towards welfare in the rural as well as in urban sector.

Table 5.1

Welfare Levels by Factor Income Components

Components	1979			1984-85			1985-86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Disposal Income	6739.61	5206.71	5680.58	7667.69	5957.13	6623.05	7917.99	6162.22	6979.44
Wages Salaries	3084.22	1136.78	1808.04	3556.58	1590.77	2077.35	3250.11	1346.22	1807.40
Self Employment	2453.07	3430.45	3133.91	2531.60	3279.69	3287.07	2974.53	3709.48	3696.96
Property	123.80	116.50	117.91	154.86	168.51	182.15	152.66	149.78	159.30
Owner House	736.72	325.24	447.04	905.14	415.55	538.76	1005.91	445.42	582.87
Social+Pension	36.33	24.85	28.53	60.40	24.16	34.35	50.44	23.77	30.19
Gift+Assist	55.90	44.79	51.10	102.72	62.05	77.05	83.19	55.47	59.95
Other Sources	212.69	125.70	94.16	378.56	412.50	444.14	383.44	430.01	588.98
	1986-87			1987-88			1992-93		
Disposal Income	8168.89	6313.98	7031.26	8116.64	6294.47	7013.58	8560.78	5855.85	6696.23
Wages Salaries	2681.19	1004.38	1513.67	2999.06	956.55	1466.23	4547.16	1786.03	2398.91
Self Employment	3465.90	4026.27	4046.05	3404.59	4065.58	4096.37	2273.45	2460.51	2602.30
Property	145.67	112.80	132.33	115.43	111.57	127.37	164.73	123.44	147.26
Owner House	1094.91	491.63	654.33	1059.19	480.75	632.55	1080.74	674.59	772.71
Social+Pension	64.27	27.30	40.80	64.99	32.98	41.43	81.1!	56.18	64.72
Gift+Assist.	79.14	56.79	61.79	66.50	40.62	49.10	29.38	83.88	79.10
Other Sources	423.28	594.89	586.22	499.38	606.44	608.30	448.43	685.70	649.23

Table 5.2

Welfare Levels by Factor Expenditure Components

Components	1979 Urban	Rural	Pakistan	1984–85 Urban	Rural	Pakistan	1985–86 Urban	Rural	Pakistan
Total Expenditure	6536.44	5370.31	5719.05	7556.48	6012.95	6573.81	7788.34	6157.62	6022.64
Food	3122.30	3180.95	3133.33	3730.62	3366.33	3308.50	3795.82	3463.21	3634.94
Cereals	677.25	933.77	816.75	761.56	929.50	845.93	788.13	959.03	933.78
Wheat	504.20	755.80	640.89	601.35	717.24	655.30	633.37	780.13	753.84
Rice	123.34	139.23	132.42	138.09	155.76	145.16	139.13	136.03	142.48
Other Cereals	49.71	38.73	41.85	22.36	56.41	45.52	15.52	42.94	37.47
Pulses	123.99	131.95	127.61	142.19	145.97	137.62	141.22	141.73	143.17
Milk	552.27	772.37	697.20	724.81	813.02	771.11	736.98	865.15	871.35
Edible Oils	312.73	212.51	242.55	311.48	238.32	239.96	308.33	230.36	250.59
Meat & Fish	291.26	164.78	204.27	350.34	187.88	217.65	351.67	180.26	228.89
Poultry	37.65	43.36	40.80	52.18	51.81	52.57	53.95	55.01	59.07
Fruits & Dry fruits	83.76	46.23	58.50	118.56	65.63	75.74	129.04	72.31	88.14
Vegetables	233.32	214.43	218.45	322.57	274.13	270.50	317.77	265.42	281.60
Spices	121.80	109.49	111.82	115.95	89.10	90.53	112.57	88.27	95.98
Gur & Sugar	247.66	274.98	264.69	238.97	242.88	231.54	281.01	269.09	277.78
Tea & Coffee	89.08	79.04	81.62	127.79	107.36	108.00	114.69	101.23	106.51
Tobacco	187.49	136.13	149.73	182.57	139.36	143.80	207.64	147.62	166.68
Miscellaneous	166.80	52.22	106.31	280.93	83.89	123.04	251.56	86.46	136.70
Cloth & Footwear	690.53	618.48	639.43	567.97	511.11	538.05	576.28	500.60	535.59
Clothing	285.45	238.17	251.70	314.90	286.38	301.13	314.25	279.88	297.70
Ready & sec. Garni	236.44	241.02	239.84	108.38	97.64	102.67	112.65	104.68	105.58
Footwear	142.53	121.23	127.53	144.91	126.67	128.17	149.63	121.72	131.88
Housing	729.83	296.31	426.90	1081.16	445.86	606.56	1162.89	464.32	643.74
Fuel	364.46	326.13	340.44	471.15	418.19	433.14	497.99	441.83	465.30
Kerosene Oil	180.59	113.45	133.13	70.72	54.32	60.32	79.12	57.55	63.27
Gas	54.04	2.16	17.32	57.95	1.73	15.60	71.43	0.86	18.01
Electricity	193.23	27.08	79.04	139.04	26.23	54.63	149.05	27.62	58.49
Furniture & Fixture	74.31	56.88	64.96	113.94	107.59	114.38	112.17	102.05	109.04
Fur.Fix.Furnishing	15.83	15.18	15.60	18.22	18.90	20.08	15.69	14.39	15.76
Kitchen.Eqp	5.29	3.00	3.68	10.34	5.70	7.22	9.56	5.40	6.71
Dur & NDur	52.88	38.70	44.86	85.00	83.63	87.08	86.88	82.26	87.75
Health	297.53	205.17	232.96	162.04	130.77	141.70	166.29	144.23	155.29
Transport	209.78	76.26	148.77	293.13	152.13	196.33	329.31	179.35	238.88
Clean & Laundry	7.67	6.54	7.28	403.80	308.55	340.46	429.31	306.82	350.77
Education	116.64	27.38	53.34	175.08	57.26	90.69	166.91	45.29	82.28
Miscellaneous	451.89	422.14	424.56	579.54	530.18	765.58	572.13	530.27	430.57
Total Expenditure	8063.87	6395.19	7024.25	7689.55	6417.76	7016.06	8795.11	711.35	7721.59
Food	3844.90	3466.69	3656.12	3801.09	3429.21	3584.15	4146.36	766.043	3920.55
Cereals	753.54	885.16	869.73	742.67	836.84	823.60	794.41	872.36	865.59
Wheat	605.96	726.11	705.22	593.50	672.90	655.97	615.78	680.30	673.15
Rice	135.57	131.44	138.38	135.17	133.53	139.15	152.83	149.10	153.10
Other Cereals	11.86	20.78	26.07	14.91	29.91	26.24	25.87	42.97	39.33
Pulses	134.89	136.19	137.42	123.59	130.10	129.00	137.89	131.44	134.49
Milk	780.79	834.84	852.25	751.67	821.71	840.06	860.07	973.13	977.05
Edible Oils	289.89	229.50	247.32	293.89	235.24	248.22	335.92	284.73	298.32
Meat & Fish	345.23	199.23	243.88	341.08	191.06	233.26	365.37	205.90	246.80
Poultry	59.11	56.07	60.57	49.63	48.76	53.49	84.38	60.03	66.75
Fruits & Dry fruits	125.53	78.01	93.45	133.41	80.08	95.85	166.54	97.88	116.13
Vegetables	361.40	294.95	316.69	386.94	318.05	335.34	432.68	405.22	416.33
Spices	117.55	92.58	100.52	114.04	93.98	99.48	126.56	109.44	114.57
Gur & Sugar	284.23	292.68	298.05	270.40	286.57	287.27	241.64	260.75	260.45
Tea & Coffee	114.50	107.27	111.61	107.70	101.43	104.11	151.03	131.93	137.91
Tobacco	205.03	149.50	168.02	199.50	160.53	172.29	171.50	141.14	150.84
Miscellaneous	272.42	118.19	156.68	300.37	123.61	163.33	278.14	99.11	134.50
Cloth & Footwear	608.62	538.28	570.56	586.15	558.66	584.71	702.75	633.68	662.64
Clothing	342.83	305.20	322.87	324.83	325.31	338.10	382.15	359.36	372.15
Ready & sec. Garni	97.09	100.86	112.83	110.47	102.38	106.55	177.18	144.17	86.41
Footwear	164.56	132.29	135.52	151.19	132.08	139.96	143.44	130.15	134.89
Housing	1223.83	518.26	727.66	1045.83	572.35	796.15	1525.33	861.20	1010.62
Fuel	514.35	466.66	488.60	469.23	475.57	503.60	543.49	504.99	488.05
Kerosene Oil	78.54	53.77	60.65	75.92	55.81	61.44	123.13	114.67	113.46
Gas	68.64	2.18	19.26	60.49	2.30	19.72	234.24	10.86	57.51
Electricity	166.30	47.65	80.02	133.50	46.69	81.52	500.16	137.79	470.41
Furniture & Fixture	116.47	115.11	120.53	119.46	116.87	124.17	155.87	126.48	138.10
Fur.Fix.Furnishing	16.55	16.58	17.53	19.20	18.47	19.68	22.20	17.48	19.56
Kitchen.Eqp	10.49	7.00	8.33	10.49	7.52	9.12	15.63	6.81	9.08
Dur & NDur	89.16	91.34	94.73	89.15	91.19	95.22	117.99	102.14	109.41
Health	180.63	149.81	162.42	171.12	161.72	174.60	220.29	224.91	227.8!
Transport	329.55	173.62	273.75	316.77	184.90	230.59	342.44	185.51	228.33
Clean & Laundry	428.49	336.79	369.98	411.88	343.06	374.96	313.91	251.03	255.45
Education	232.76	51.07	89.48	181.33	47.80	78.38	290.34	95.14	159.84
Miscellaneous	657.97	598.05	621.94	632.84	555.60	571.70	566.43	441.46	433.10

In 1984-85, it is observed that total welfare and contribution of its components have increased in all areas because the level of real per adult equivalent income has increased. Gross Domestic Product registered a growth rate of 6.2 percent over the 1984-85 to 1987-88 period and 5 percent over the 1987-88 to 1990-91 period. In 1985-86 the welfare level has slightly increased in rural area. Contribution of wages and salaries have increased due to higher growth rates of employment in 1984-85 to 1987-88 led to growth of wages at the rate of 8.4 percent in the large-scale manufacturing sector, of 5.4 percent in the agriculture sector and of 1.8 percent of the unskilled workers. The welfare contribution of self-employment and owner occupied house have also increased in all areas. Self-employment has shown the highest contribution in the rural sector and Pakistan while wages and salaries have contributed highest level of welfare in the urban sector.

In 1986-87, contribution of wages and salaries have decreased due to the decline in the wages of the unskilled workers, which form the bulk of the poor in both of the rural and urban areas while contribution of self-employment have increased in the two sectors and Pakistan. As far as property income is concerned its contribution of welfare level has decreased and owner occupied house have increased. In 1987-88, contribution of wages and salaries have increased in urban sector and again declined in the rural sector and overall Pakistan. Contribution of the share of self-employment has shown no significant change in all areas. In 1992-93, total welfare level in the urban sector has increased but has decreased in the rural and overall Pakistan. Share of wages and salaries has increased in urban area due to increased of wages of large-scale manufacturing sector while the share of self-employment in total welfare have increased with 2.8 percent growth in wages of agriculture labor in the rural areas. Other components of income have no significant change during this year.

Next is an examination of the total expenditure and contribution of its components in total welfare. Table 5.2 indicates that the level of welfare has been higher in the urban sector than in the rural sector and Pakistan in all the years considered. Food expenditure has contributed highest level of welfare in all areas during the period of analysis. Welfare contribution from cereals has been larger and its share has been also higher in the rural sector than the other food items. Table 5.2 indicates that in 1979 cereals have highest share in total welfare, then comes milk, edible oils, meat and fish, vegetables and gur & sugar. Milk has a higher share in welfare in rural areas than in urban sector. The share of other components of food, poultry fruits and dry fruits, spices, tea and tobacco and miscellaneous items have relatively smaller share in total welfare.

The welfare level increased up till 1986-87 in all areas but it declined slightly in 1987-88 and again increased in 1992-93. Welfare contribution of milk increased over time and its welfare share increased in urban sector and decreased in rural sector because of improved transportation system. Vegetables

have revealed increase in the contribution of welfare and also in its share in 1992-93. The welfare levels and shares of other components of food have not changed drastically during the period of analysis.

Now we discuss non-food items. In 1979, clothing and footwear and its components have shown slight difference in the welfare level for the urban, the rural and overall Pakistan. It has also shown no obvious change over time between 1979 to 1992-93. Housing has shown continuous increase in welfare in all areas except that in 1987-88. Its welfare share has increased in 1992-93 as compared to 1979. There is obvious difference in its welfare level in the urban, rural and Pakistan.

The share of welfare of fuel in total welfare shows insignificant change over time. In 1979, kerosene oil contributed more welfare in the urban areas than in the rural area and Pakistan but over time its share decreases in the urban area as compared to the rural area. A drastic change in the level of welfare of gas from 1979 to 1992-93 in the urban sector was observed while in the rural area its contribution was negligible. Its welfare share increased in 1992-93 as compared to 1979. Between these two years there was no obvious changes in all areas. Furniture and fixture depicted a change in welfare level from 1979 to 1984-85 and after that no significant change was observed. Health contributed more in welfare than transportation and education. Its share declined over time up till 1987-88 and then increased in 1992-93 in all sectors. The share of education had no significant change in all areas during the analysis period.

5.2. Estimates of Elasticity of Welfare by Income and Expenditure Components

The estimates of the elasticity of welfare with respect to various income components and expenditure categories are discussed in the following section. These elasticities measure percentage change or responsiveness in welfare when the income from a particular source or expenditure on a particular consumption category increases by one percent.

The estimated income elasticity of welfare for various years is shown in Table 5.3. The Table shows that in the urban area wages and salaries income has the largest value of elasticity due to highest share in welfare. This is followed by elasticity for self-employment income and owner house. In the rural area, the elasticity is largest for self-employment income followed by the elasticity of wages and salaries and owner occupied house. The elasticity estimates for the remaining income sources are generally small both in rural and urban areas.

It has been observed that there was a decline in elasticity of welfare in wages and salaries up till 1986-87 and then it increased in next years due to decline in inequality and rise in income level. In the rural area, the elasticity of wages and salaries increased in comparison to 1979. Self-employment showed a decline in elasticity in 1984-85 and 1985-86 and later increased in 1986-87 and

Table 5.3

Welfare Elasticity by Income Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Disposable Income	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wages Salaries	0.46	0.22	0.32	0.46	0.27	0.31	0.41	0.22	0.26
Self Employment	0.36	0.66	0.55	0.33	0.55	0.50	0.38	0.60	0.53
Property	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.02
Owner House	0.11	0.06	0.08	0.12	0.07	0.08	0.13	0.07	0.08
Social+Pension	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.00
Glft+Assist.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Other Sources	0.03	0.02	0.02	0.05	0.07	0.07	0.05	0.07	0.08
	1986–87			1987–88			1992–93		
Disposable Income	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wages Salaries	0.33	0.16	0.22	0.37	0.15	0.21	0.53	0.30	0.36
Self Employment	0.42	0.64	0.58	0.42	0.65	0.58	0.27	0.42	0.39
Property	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Owner House	0.13	0.08	0.09	0.13	0.08	0.09	0.13	0.12	0.12
Social+Pension	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01
Gift+Assist.	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01
Other Sources	0.05	0.09	0.08	0.06	0.10	0.09	0.05	0.12	0.10

1987-88. Its level dropped in 1992-93 in both sectors. In other elasticity estimates, no significant changes had been observed.

Turning to expenditure components, it has observed from Table 5.4 that food expenditure has larger elasticity than other components in the rural as well as the urban areas. In 1979, its elasticity is greater in the rural sector than in the urban sector. Over time it increased in all areas but dropped in 1992-93.

The elasticity with respect to cereals followed the same trend as the one for total food expenditure. In 1979 in the urban sector wheat had low elasticity as compared to the rural sector and over time it dropped slightly. In the elasticity of rice no change was observed in all areas. In the rural sector milk had greater elasticity than in the urban sector and overall Pakistan. In 1992-93 welfare elasticity of milk had shown no changes in the rural sector while it increased in the urban sector and the overall Pakistan. Edible oils, meat and fish, vegetables, gur and sugar and tobacco have nearly the same elasticity of welfare in 1979. Poultry and fruits have very low elasticity in all the sectors, no drastic change in their elasticity over time was found.

In non-food expenditure components clothing and footwear and its components had nearly the same elasticity in all areas in 1979. Over time these elasticities declined slightly in all areas. Housing had higher values of elasticity in the urban sector than in the rural sector and overall Pakistan, its elasticity increased in all the years as compared to 1979.

Fuel on the other hand had nearly the same elasticity during the analysis period. Its component kerosene oil had very low elasticity during all the years in all the areas. Gas also showed a small estimate of the elasticity in the rural areas and urban sector and in overall Pakistan. Electricity had low elasticity in 1979 but it is greater in the urban sector as compared to the rural sector. In 1992-93,

Table 5.4

Welfare Elasticity by Expenditure Components

Components	1979			1984–85			1985–86		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan	Urban	Rural	Pakistan
Total Expenditure	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Food	0.48	0.59	0.55	0.49	0.56	0.50	0.49	0.56	0.60
Cereals	0.10	0.17	0.14	0.10	0.15	0.13	0.10	0.16	0.16
Wheat	0.08	0.14	0.11	0.08	0.12	0.10	0.08	0.13	0.13
Rice	0.02	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02
Other Cereals	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01
Pulses	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Milk	0.08	0.14	0.12	0.10	0.14	0.12	0.09	0.14	0.14
Edible Oils	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Meat & Fish	0.04	0.03	0.04	0.05	0.03	0.03	0.05	0.03	0.04
Poultry	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fruits & Dry fruits	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01
Vegetables	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.05
Spices	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.02
Gur & Sugar	0.04	0.05	0.05	0.03	0.04	0.04	0.04	0.04	0.05
Tea & Coffee	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.02
Tobacco	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0.03
Miscellaneous	0.03	0.01	0.02	0.04	0.01	0.02	0.03	0.01	0.02
Cloth & Footwear	0.11	0.12	0.11	0.08	0.09	0.08	0.07	0.08	0.09
Clothing	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.05
Ready & sec. Garm	0.04	0.04	0.04	0.01	0.02	0.02	0.01	0.02	0.02
Footwear	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Housing	0.11	0.06	0.07	0.14	0.07	0.09	0.15	0.08	0.11
Fuel	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.07	0.08
Kerosene Oil	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Gas	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Electricity	0.03	0.01	0.01	0.02	0.00	0.01	0.02	0.00	0.01
Furniture & Fixture	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.02
Fur,Fix,Furnishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kitchen,Eqp	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dur & NDur	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Health	0.05	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.03
Transport	0.03	0.01	0.03	0.04	0.03	0.03	0.04	0.03	0.04
Clean & Laundry	0.00	0.00	0.00	0.05	0.05	0.05	0.06	0.05	0.06
Education	0.03	0.01	0.01	0.02	0.01	0.01	0.03	0.01	0.02
Miscellaneous	0.07	0.08	0.07	0.08	0.09	0.12	0.07	0.09	0.07
Total Expenditure	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Food	0.48	0.54	0.52	0.49	0.53	0.51	0.47	0.53	0.51
Cereals	0.09	0.14	0.12	0.10	0.13	0.12	0.09	0.12	0.11
Wheat	0.08	0.11	0.10	0.08	0.10	0.09	0.07	0.10	0.09
Rice	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Other Cereals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Pulses	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Milk	0.10	0.13	0.12	0.10	0.13	0.12	0.10	0.14	0.13
Edible Oils	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Meat & Fish	0.04	0.03	0.03	0.04	0.03	0.03	0.04	0.03	0.03
Poultry	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Fruits & Dry fruits	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.02
Vegetables	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05
Spices	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Gur & Sugar	0.04	0.05	0.04	0.04	0.04	0.04	0.03	0.04	0.03
Tea & Coffee	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02
Tobacco	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02
Miscellaneous	0.03	0.02	0.02	0.04	0.02	0.02	0.03	0.01	0.02
Cloth & Footwear	0.08	0.08	0.08	0.08	0.09	0.08	0.08	0.09	0.09
Clothing	0.04	0.05	0.05	0.04	0.05	0.05	0.04	0.05	0.05
Ready & sec. Garm	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01
Footwear	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Housing	0.15	0.08	0.10	0.14	0.09	0.11	0.17	0.12	0.13
Fuel	0.06	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.06
Kerosene Oil	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Gas	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01
Electricity	0.02	0.01	0.01	0.02	0.01	0.01	0.06	0.02	0.06
Furniture & Fixture	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Fur,Fix,Furnishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kitchen,Eqp	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dur & NDur	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Health	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03
Transport	0.04	0.03	0.04	0.04	0.03	0.03	0.04	0.03	0.03
Clean & Laundry	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.03
Education	0.03	0.01	0.01	0.02	0.01	0.01	0.03	0.01	0.02
Miscellaneous	0.08	0.09	0.09	0.08	0.09	0.08	0.06	0.06	0.06

an increase in the elasticity was observed in all areas. In furniture and fixture and its components there was a very small magnitudes of elasticity in all areas. The elasticity declined after 1979 in all areas while in education there was low elasticity during all the years in the analyses.

5.3. Contribution of Income-effect and Inequality-effect on Elasticity of Welfare

Tables 5.5 and 5.6 present income-effect and inequality-effect in total elasticity of welfare by computing equation (7) in Chapter III. The inequality-effect measures the gain or loss in welfare as a result of income redistribution. If the increase in the ith income component favors the poor more than the rich, the inequality component will be positive, otherwise it will be negative.

Table 5.5

Percentage Share of Income-effect and Inequality-effect on Income Elasticity of Welfare

Components	Income Effect			Inequality Effect		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan
			1979			
Wages Salaries	89.37	84.54	96.52	10.63	15.46	3.48
Self-employment	104.11	101.01	9532	-4.11	-1.01	4.68
Property	152.69	130.67	139.42	-52.69	-30.67	-39.42
Owner House	103.07	85.92	107.27	-3.07	14.08	-7.27
			1984-85			
Wages Salaries	88.44	80.63	90.72	11.56	19.37	9.28
Self-employment	105.31	104.67	98.60	-5.31	-4.67	1.40
Property	150.08	156.70	149.10	-50.08	-56.70	-49.10
Owner House	105.89	83.91	103.30	-5.89	16.09	-3.30
			1985-86			
Wages Salaries	90.48	83.80	94.17	9.52	16.20	5.83
Self-employment	100.09	102.90	96.57	-0.09	-2.90	3.43
Property	155.89	128.84	138.09	-55.89	-28.84	-38.09
Owner House	104.12	86.76	103.92	-4.12	13.24	-3.92
			1986-87			
Wages Salaries	98.91	90.36	101.83	1.10	9.64	-1.83
Self-employment	93.88	99.75	94.03	6.11	0.25	5.97
Property	172.26	148.13	160.50	-72.26	-48.80	-60.50
Owner House	101.48	88.30	105.21	-1.49	11.70	-5.21
			1987-88			
Wages Salaries	91.51	93.45	104.05	8.49	6.55	-4.05
Self-employment	98.93	99.58	93.90	1.07	0.42	6.10
Property	156.23	133.82	135.09	-56.23	-33.82	-35.09
Owner House	108.36	89.23	108.45	-8.36	10.77	-8.45
			1992-93			
Wages Salaries	86.50	82.87	90.75	13.50	17.13	9.25
Self-employment	113.43	116.16	108.10	-13.43	-16.16	-8.10
Property	170.51	188.93	177.00	-70.51	-88.93	-77.00
Owner House	103.44	77.05	90.77	-3.44	22.95	9.23

Table 5.5 reveals that income effect from wages and salaries, self-employment and owner occupied house have contributed more than the other components of income in urban areas, rural area and Pakistan. In 1992-93, contribution of the income effect from wages and salaries increased and that from self-employment decreased substantially in all areas. Between 1979 and 1992-93 contribution of the income-effect slightly varied in all the other components as their share in these components were negligible in all areas.

The inequality-effects from wages and salaries have contributed more in urban sector, rural sector and overall Pakistan except in 1986-87. Its positive value showed that there would be welfare gain as a result of income redistribution. Negative values for self-employment, property income and other sources were observed, which have shown welfare loss as a result of redistribution of income. It demonstrated that in elasticity of welfare income-effect was more pronounced in each component as compared to inequality effect in each component of income in the urban sector, rural sector and overall Pakistan. There had been a slight variation in percentage share of the income-effect and the distribution effect in income components of wages and salaries over time in all areas. Property income had shown an increase in percentage share of income-effect over time specially, in rural sector. In self-employment percentage share of inequality-effect had shown much variation during the analysis period in all areas.

Next, we look at the structure of expenditure components and their contribution of income-effect, which is presented in Table 5.6. Food expenditure has a larger income-effect than the inequality-effect in urban area, rural area and Pakistan in all the years of analyses. This effect declined marginally between 1979 to 1992-93 in all the sectors. The components of food which include cereals, milk, meat and fish, vegetables and sugar contributes substantial level of income effect in total elasticity. In the same Table 5.6, inequality-effect on expenditure elasticity and its components have also been analyzed. It was observed that food expenditure had a positive sign except in urban sector in 1979, which shows that redistribution of income favors the poor. In 1979, milk, meat, poultry and fruits have shown greater concentration with negative sign in the urban sector. In the rural area, there was less concentration of food items. In 1992-93, these items have indicated less concentration but the concentration of milk and milk products increased in the urban sector. Further, it was seen that inequality-effect of food expenditure and many other expenditure components have increased over time.

In non-food components, clothing and footwear, housing, fuel, health and transport also contributed to income-effect quite significantly. There was no significant change observed in income-effect during the given period. The estimates revealed that most of the expenditure components, which may be called luxury items, have negative sign. This may lead to the conclusion that any

redistribution of income will favor the rich families. In Table 5.6, the percentage share of income effect and inequality effect in each expenditure component had shown that income effect is more obvious than inequality effect. In 1979, food components, meat and fish, poultry; fruits and dry fruits and miscellaneous items reflected more inequality share than other food components in all areas with negative sign. In non-food components, kerosene oil, furniture and fixture, furnishing, kitchen equipment, transport, education and miscellaneous items have high share in inequality than other components in all areas. All items have negative sign excepts kerosene oil, showing concentration in rich classes and redistribution of expenditure will favor more rich than the poor. In 1992-93, the inequality effect was not as great as compared to inequality effect in 1979 in the above categories. As far as income effect is concerned its share in each component was always greater than inequality-effect in all categories of expenditure in all areas during the analysis period.

5.4. Changes in Income-effect and Inequality-effect in Welfare by Income and Expenditure Components

In this section, an attempt to explain changes in welfare in terms of income and expenditure has been made. Equation (9), which showed that μ_i^* $(1-C_i^*)$ - $/4$ $(1-Q)$ is the contribution of the ith income component to the total change in welfare has been used. This contribution is further decomposed in Equation (11) into two components, one due to a change in the mean of the ith income component and second due to a change in the distribution of the ith income component. The calculations based on this equation are presented in Tables 5.7 and 5.8. It can be seen that between 1979 and 1984-86 total welfare had increased in the urban and rural areas and Pakistan. It is observed that income-effect increased and its percentage share was also greater than inequality-effect because the annual growth rates of income was highest during 1979 to 1984-85 as it showed the effect of foreign remittances following the large scale migration of Pakistanis to the Middle East, a huge flow of foreign grants and loans owing to the Afghan crises and implementation of *Zakat* and *Ushr*. In the same period, inequality-effect increased in the rural areas and in overall Pakistan. Between 1984-85 to 1985-86, the inequality-effect contributed more in changing welfare levels. The inequality-effect for the period 1987-88 to 1992-93 indicates that its share is greater in declining welfare level in the rural areas and in Pakistan, while income-effect contributes greater share in the urban areas in increasing welfare level.

In Table 5.8, it is observed that between 1979 to 1984-85 income-effect is more pronounced on welfare in total expenditure in all areas. The trends changed in coming years as the inequality-effect contributes more in changing welfare levels. Between 1987-88 to 1992-93 in the urban area large proportion of income-effect contributed in increasing welfare level while in the rural areas inequality-effect played a significant role in increasing welfare in total expenditure (for more detail see Haq,1997).

Table 5.6

Percentage Share of Income-effect and Inequality-effect
on Expenditure Elasticity of Welfare

Components	Income-effect			Inequality-effect		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan
1979						
Food	104.79	99.73	99.89	−4.79	0.27	0.11
Cloth & Footwear	96.12	98.50	96.35	3.88	1.50	3.65
Housing	114.31	97.94	119.75	−14.31	2.06	−19.75
Fuel	87.75	95.44	90.39	12.25	4.56	9.61
Furniture & Fixture	127.13	122.42	121.96	−27.13	−22.42	−21.96
Health	96.33	98.84	99.16	3.67	1.16	0.84
Education	150.40	165.66	185.62	−50.40	−65.66	−85.62
1984–85						
Food	91.20	94.25	91.29	8.80	5.75	8.71
Cloth & Footwear	92.75	95.02	92.56	7.25	4.98	7.44
Housing	107.43	96.98	112.61	−7.43	3.02	−12.61
Fuel	87.21	92.68	89.77	12.79	7.32	10.23
Furniture & Fixture	118.25	110.06	110.95	−18.25	−10.06	−10.95
Health	94.73	98.42	96.52	5.27	1.58	3.48
Education	141.86	145.04	160.50	−41.86	−45.04	−60.50
1985–86						
Food	90.38	95.27	81.65	9.62	4.73	18.35
Cloth & Footwear	93.74	96.85	83.92	6.26	3.15	16.08
Housing	108.24	97.19	101.65	−8.24	2.81	−1.65
Fuel	87.79	93.27	79.88	12.21	6.73	20.12
Furniture & Fixture	116.13	107.71	97.59	−16.13	−7.71	2.41
Health	95.05	100.03	87.46	4.95	−0.03	12.54
Education	140.36	134.85	171.50	−40.36	−34.85	−71.50
1986–87						
Food	90.26	95.62	91.43	9.74	4.38	8.57
Cloth & Footwear	92.25	95.68	92.76	7.75	4.32	7.24
Housing	106.26	96.91	112.60	−6.26	3.09	−12.60
Fuel	87.26	93.42	89.19	12.74	6.58	10.81
Furniture & Fixture	111.34	107.45	106.17	−11.34	−7.45	−6.17
Health	96.04	99.61	97.47	3.96	0.39	2.53
Education	109.05	145.44	161.68	−9.05	−45.44	−61.68
1987–88						
Food	89.51	95.96	92.01	10.49	4.04	7.99
Cloth & Footwear	91.46	95.02	91.80	8.54	4.98	8.20
Housing	113.01	98.16	118.95	−13.01	1.64	−18.95
Fuel	89.11	94.38	90.95	10.89	5.62	9.05
Furniture & Fixture	114.76	108.33	108.57	−14.76	−8.33	−8.57
Health	91.28	102.91	96.66	8.72	−2.91	3.34
Education	139.39	140.61	160.05	−39.39	−40.61	−60.05
1992–93						
Food	90.54	97.70	93.73	9.46	2.30	6.27
Cloth & Footwear	97.01	99.46	97.19	2.99	0.54	2.81
Housing	108.97	95.08	107.55	−8.97	4.92	−7.55
Fuel	87.27	92.66	91.19	12.73	7.34	8.81
Furniture & Fixture	121.59	115.15	117.30	−21.59	−15.15	−17.30
Health	95.85	97.61	94.54	4.15	2.39	5.46
Education	97.77	97.51	99.23	2.23	2.49	0.68

Table 5.7

*Percentage Changes in Income-effect and Inequality-effect
on Welfare in Disposable Income*

Years	Income-effect			Inequality-effect		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan
1979 to 1984-85	109.6	129.1	110.7	−9.6	29.1	10.70
1984-85 to 1985-86	11.1	−144.4	−8.9	88.9	244.4	108.89
1985-86 to 1986-87	114.5	5.0	101.5	−14.5	95.0	−1.47
1986-87 to 1987-88	. 27.9	56.7	31.4	72.1	43.3	68.59
1987-88 to 1992-93	66.0	27.0	32.9	34.0	73.0	67.12

Table 5.8

*Percentage Changes in Income-effect and Inequality-effect
on Welfare in Total Expenditure*

Years	Income-effect			Inequality-effect		
	Urban	Rural	Pakistan	Urban	Rural	Pakistan
1979 to 1984-85	94.1	79.8	85.5	5.9	**20.2**	14.52
1984-85 to 1985-86	206.0	−61.1	10.0	−106.0	161.1	90.01
1985-86 to 1986-87	83.9	148.6	−39.4	16.1	−48.6	139.45
1986-87 to 1987-88	80.3	40.2	54.9	19.7	59.8	45.08
1987-88 to 1992-93	99.9	136.5	167.0	0.1	−36.5	-66.97

Chapter 6

SUMMARY AND CONCLUSIONS

The purpose of this study is to analyze inequality and welfare in Pakistan on the basis of decomposition analysis. The study based on household data relating to the "Household Income and Expenditure Surveys" conducted for the years 1979, 1984-85, 1985-86, 1986-87, 1987-88, and 1992-93.To assess inequality and welfare across different time periods all the data were adjusted on 1992-93 prices (RS). Adult equivalent scale for the homogeneity of the population was also developed. For the measurement of welfare, Sen's welfare index (1974) was proposed, as it takes into account both the size and the distribution of income. This welfare index has an additional advantage that it provides an exact decomposition of total welfare into various components relative to income sources or expenditure categories.

The main conclusions derived from the present study are as follows:

First, the level of inequality did not have smooth trend over time. In 1992-93, it is the highest in all the areas. It is also interesting to note that inequality has been less in the rural sector than it is in the urban sector and in the overall Pakistan. Inequality in wages and salaries income has been observed much higher in the urban sector than in the rural sector. This has been so primarily because of the much greater heterogeneity of urban labor force. Expenditure inequality is greater in the urban sector than in rural sector and in the overall Pakistan. Income inequality is more pronounced than expenditure inequality.

Second, the estimates of progressivity index revealed that income from wages and salaries is progressive in 1979 1984-85, 1985-86 and 1992-93, indicating that any policy to increase wages and salaries will favor poor families more than rich families. Property income became regressive in all sectors and in Pakistan from 1979 to 1992-93, indicating that any policy to increase property income will favor richer families.

Third, while calculating welfare index it was observed that welfare level from income and expenditure and its components increased during the analysis period. Wages and salaries contributed more in total welfare in urban sector and self-employment contributed more in the rural sector. In total expenditure, food expenditure contributed larger share in welfare and its share was also greater in the rural sector than in the urban sector and the overall Pakistan. In food expenditure components, cereals contributed larger share in welfare in all the areas. Among the non-food expenditure components the share of clothing and

footwear and electricity declined and the share of housing increased significantly. The growth in welfare due to expenditure on furniture and fixture, health, transport and education had been insignificant over time between 1979 to 1992-93.

Fourth, as regards to elasticity of welfare, it was observed that elasticity of wages and salaries increased in 1992-93 as compared to 1979 in the urban sector and in the rural sector elasticity of self-employment decreased over time. In total expenditure, elasticity of welfare in food expenditure contributed largest share in all areas. In non-food expenditure, insignificant changes were observed over time in all areas.

Finally, breakdown changes in total welfare into two factors were done due to income-effect and inequality-effect. Results revealed that income-effect was the main contributor in changes in welfare in each component because the level of inequality in the distribution of income or expenditure had not changed by a great margin during the period of analysis.

A number of policy implications can be drawn from the above analysis. In order to increase the welfare of the society, inequality can be reduced by rigorous policy measures. The level of the per adult equivalent income should be increased by focusing on the targeted group in the rural areas through promoting small-scale activities by removing constraints such as credit, lack of skills, physical infrastructure etc. The poor should benefit more by increasing the share of public expenditure on primary education and on the rural health facilities. The tax structure must be progressive. Inflationary tendencies should be slowed down by reducing fiscal deficits. The system of *Zakat and Ushr,* and *Bait-ul-mal* should be strengthened. The importance of this paper is that it provides a basis for determining the sources and magnitude of inequality and welfare. That would help in designing appropriate policies, which will protect the poorest and most vulnerable groups in a society.

REFERENCES

Afridi, Usman and Asghar Qadir, and Javed Zaki (1984) Effect of Dual Sector Inflation Across Income Levels in Pakistan. *The Pakistan Development Review* 23:3&4 381–390

Ahmad, Ehtisham, and Stephen Ludlow (1989) Poverty Inequality and Growth in Pakistan. *The Pakistan Development Review* 28:4 831–850.

Amjad, R., and A. R. Kemal (1997) Macroeconomic Policy and their Impact on Poverty Alleviation in Pakistan. *The Pakistan Development Review* 36:1 39–68.

Atkinson, A. B. (1970) On the Measurement of Inequality. *Journal of Economic Theoiy* 12:2 244–63.

Cheema, A Ahmad, and Muhammad Hussain Malik (1984) Consumption and Employment Effects of Income Redistribution in Pakistan. *The Pakistan Development Review* 23:2&3 347–360.

Chaudhry, M. Ghaffar (1982) Green Revolution and Redistribution of Rural Income; Pakistan Experience. *The Pakistan Development Review* 21:3 173–205

Ercelawn, A. (1988) Income Inequality in Pakistan During the 70s: Issues in Estimation. Applied Economic Research Center, University of Karachi. (Discussion Paper No. 92.)

Foster, J., J. Greer, and E. Thorbecke (1985) A Class of Decomposable Poverty Measures. *Econometrica* 52:3 761–66.

Haq, K. (1964) A Measurement of Inequality in Urban Personal Income Distribution in Pakistan. *The Pakistan Development Review* 4:4 623–664.

Haq, Rashida (1997) Inequality in Income, Expenditure and Welfare in Pakistan. Unpublished M. Phil Dissertation. Quaid-i-Azam University, Islamabad.

Hirochman, O. Albert (1973) The Changing Tolerance for Income Inequality in the Course of Economic Development. *The Journal of Economics* 87:3 544–566.

Iqbal, M. Qamar (1988) Use of Inequality Measures in Calculating Income Elasticity. *The Pakistan Journal of Applied Economics* 7:1 59–67.

Jeetun, A. (1978) Trends in Inequality of Income Distribution in Pakistan. Applied Economic Research Center, University of Karachi, Karachi. (Discussion Paper No. 29.)

Jeffri, S., M. Younas, and A. Khattak (1995) Income Inequality and Poverty in Pakistan. *ThePakistan Economic and Social Review* 33:1&2 165–193.

Kakwani, N. (1977) Application of Lorenz Curves in Economic Analysis. *Econometrica* 45:3 719–727.

Kakwani, N. (1980) On a Class of Poverty Measure. *Econometrica* 48:3 437–446.

Kakwani, N. (1984) Welfare Ranking of Income Distribution. *Review in Economic Inequality Measurement and Policy* Advances in Econometrics, 3, Greenwich, Conn: JAI Press.

Kakwani, N. C. (1987) Inequality of Income Derived from Survey Data during the Inflation Period. *Economic Letters* 23: 387–388.

Kakwani, N. C. (1996) Income Inequality, Welfare and Poverty in Ukraine. *Development and Change 21A* 663–91.

Kemal, A. R. (1981) Income Distribution in Pakistan: A Review. Islamabad: Pakistan Institute of Development Economics. (Research Report Series, No. 123.)

Kemal, A. R. (1994) Structural Adjustment, Employment, Income Distribution and Poverty. *The Pakistan Development Review* 33:4 901–11.

Khandkar, R. (1973) Distribution of Income and Wealth in Pakistan. *The Pakistan Economic and Social Review* 11:1 1–39.

Kruijk, Hans de, and Myma van Leeuwen (1985) Changes in Poverty and Income Inequality in Pakistan During 1970s. *The Pakistan Development Review* 24:2&3 407∧122.

Kruijk, Hans de (1986) Inequality in the Four Province of Pakistan. *The Pakistan Development Review* 25:4 685–706.

Kuznets, S. (1953) Share of Upper Income Groups in Income and Savings. New York: National Bureau of Economic Research.

I.eman, Robert, and Shlomo Yitzhaki (1985) Income Inequality Effects of Income Sources: A New Approach and Application to the United States. *Review of Economic and Statistics* 67:1 151–156.

Mahmood, Z. (1984) Income Inequality in Pakistan: An Analysis of Existing Evidence. *The Pakistan Development Review* 23:2&3 365–376.

Malik, Sohail J. (1993) Poverty in Pakistan, 1984-85 to 1987-88. Micheal Lipton and Van Der Gaag(eds.) *Including the Poor*. Washington, D. C.: The World Bank.

Mujahid, G. B. S. (1978) A Note on Measurement of Poverty and Income Inequalities in Pakistan: Some Observations of Methodology. *The Pakistan Development Review* 17:3 365–377.

Naseem, S. M. (1973) Mass Poverty in Pakistan: Some Preliminary Findings. *The Pakistan Development Review* 12:4 317–360.

OECD (1982) *The OECD ˌList of Social Indicator.* Paris: Organization for Economic Cooperation and Development.

Pakistan, Government of (Various Issues) Household Income and Expenditure Survey. Karachi: Federal Bureau of Statistics.

Sen, A. K. (1973) *On Economic Inequality.* London: Oxford University Press.

Sen, A. K. (1974) Information Base of Alternative Welfare Approach: Aggregation and Income Distribution. *Journal of Public Economics* 44:3 219–231.

Shorrocks, A. F. (1982) Inequality Decomposition by Factor components. *Econometrica* 50:1 193–211.

Yitzhaki, S. (1979) Relative Deprivation and Gini Coefficient. *Quarterly Journal of Development Review* XCIII: 321–324.

Zaidi, M. A., and K. De Vos (1993) Research on Poverty Statistics in Pakistan. Some Sentivity Analyses. *The Pakistan Development Review* 32:4 1171–1186.

ABSTRACT

This study analyses inequality and welfare in Pakistan. The data used is based on "Household Income and Expenditure Surveys" conducted for the years 1979 to 1992-93. To access inequality and welfare across different time periods the data was adjusted for 1992-93 prices (Rs), for the homogeneity of the population adult equivalence scale was used because it is better for examining disparity in economic welfare in a society. For the measurement of welfare Sen's welfare index was applied which, takes into account both the size and the distribution of income. This welfare index also provides a decomposition of total welfare into its components.

This study confirmed that income inequality varied widely across different time period and it was maximum in 1992-93. Income distribution in the urban sector was more skewed than in the rural sector. While analyzing decomposition of income, it was observed that wages and salaries contributed the highest share in inequality for the urban sector and self-employment generated the highest share in income inequality for the rural sector. The estimates of concentration index confirmed that inequality in income distribution were more pronounced than those in the distribution of consumption expenditure. Measuring welfare index, it was analyzed that welfare level had increased over time. However, it should be noted that increasing income inequality does not necessarily imply decreasing welfare. The decomposition of income showed that wages and salaries had contributed more in total welfare in the urban sector and self-employment had contributed more in total welfare in the rural sector In total consumption expenditure, food expenditure showed the highest level of welfare elasticity in all areas. Finally, estimating changes in welfare level, it was noted that income-effect was more obvious factor than inequality-effect. This paper provides a basis for determining the sources and magnitude of inequality and welfare level. This would help in designing rigorous demand management policies, ensuring a more equitable distribution of the gains of economic development.

Recent Titles in the Series

No. 160   *Characteristics of the Workers in the Urban Informal Sector of Pakistan* by A. R. Kemal and Zafar Mahmood. (1998) 24pp.

No. 161   *The Urban Informal Sector of Pakistan: Some Stylized Facts* by A. R. Kemal and Zafar Mahmood. (1998) 24pp.

No. 162   *The Profitability of the Banking Sector of Pakistan* by Rehana Siddiqui and Rizwana Siddiqui. (1998) 20pp.

No. 163   *A Social Sector Strategy for Pakistan* by Zafar Mahmood. (1998) 39pp.

No. 164   *A Study of Smuggling on Pak-Afghun Border* by Zafar Mahmood. (1998) 47pp.

No. 165   *Economic Performance, Cost Structure, and Programme Placement of Bank Branches in Pakistan* by Sarfraz Khan Qureshi, Musleh-ud Din, Ejaz Ghani, Kalbe Abbas, Masood Ishfaq Ahmad and Akhliar Hussain Shah. (1998) 79pp.

No. 166   *Remittances and Investments at the Household Level in Pakistan* by G. M. Arif. (1999) 37pp.

No. 167   *Domestic Resource Mobilisation for Development: An Analysis of the Past Trends and Future Options* by Sarfraz Khan Qureshi, Musleh-ud Din, Ejaz Ghani and Kalbe Abbas. (1999) 31pp.

No. 168   *The Structure of Informal Credit Market in Pakistan* by M. Irfan, G. M. Arif, Syed Mubashir Ali and Hina Nazli. (1999) 60pp.

No. 169   *Growth Potential of Small and Medium Industries in Pakistan* by Zafar Mahmood. (1999) 26pp.