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INCOME DISTRIBUTION IN PAKISTAN:  
A REVIEW

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## INCOME DISTRIBUTION IN PAKISTAN: A REVIEW

Most of the developing countries in the past have relied exclusively on accelerating growth rate of GNP in order to alleviate the problem of widespread poverty in these countries. However, despite substantial increases in per capita incomes of most of the developing countries, poverty remained widespread and in some countries the problem even accentuated thanks to a very rapid increase in the income inequalities. It is, therefore, quite clear that mere acceleration in growth rate of GNP is not sufficient; the higher growth rates of GNP must be accompanied by better income distribution in order to reduce the incidence of poverty.

Development of a country can be accomplished if everyone contributes and that can only be ensured if gains from development are fairly distributed. It follows then that unless fruits of growth are distributed fairly, growth will be self-defeating. The realization that distribution cannot be overlooked in the development process has led to the formulation of planning models which explicitly take income distribution into consideration. It has also led a number of researchers to conduct studies on the measurement of income inequalities, the effects of various changes in policies on growth and distribution, and the effects of changes in income distribution on the patterns of growth, consumption and the demand for production factors.

Generally speaking almost all the studies related to income distribution in Pakistan have been done on measuring income inequalities by Gini-coefficient, Lorenz Curves, Theil's entropy measure, pareto-coefficient, coefficient of variations and drawing arbitrary poverty lines. Very

little attempt has been made to explain the level and the changes in income inequalities, to decompose income inequalities into inequalities due to occupation, sectors, rural-urban, etc. Similarly, hardly any study analyses properly the tax structure and the effects of government expenditures on income distribution. Relatively very little work has been done to see the effects of various government policies on income distribution and the impact of distribution on demand for various production factors.

We may study the problem of inequalities in income distribution by studying inequalities in the personal incomes or in the functional distribution of income. However, it is important to note that inequalities in personal income distribution cannot be inferred from functional distribution of income unless we also know distribution of the assets. Unfortunately data on asset distribution is almost non-existent in Pakistan and as such studies on functional income distribution are not going to be very helpful in studying trends in the income inequalities.

Similarly, post-tax income distribution studies need to be supplemented by a comprehensive analysis of taxation and public expenditures. Moreover, we may analyse the impact of import substitution, export expansion, changes in terms of trade, price support policies, etc. on the distribution of income.

In this paper, we shall review the availability and quality of data related to distribution of income, analyse trends in income distribution by reviewing studies done so far and then go on to suggest studies required to understand the phenomenon. We shall also briefly touch upon the inter-relationships between income inequalities and labour demand.

Plan of the study is as following: In the first section, we shall review the volume and quality of data. In the second section, we analyse the income distribution studies done so far. In the third section, we shall study trends in poverty. Decomposition studies are reviewed in the fourth section. Impact of industrialization and green revolution on income distribution are reviewed in the fifth and six section. Tax structure and public expenditures in relation to income distribution is discussed in the seventh section. The inter-relationships between income inequalities and demand for labour are discussed in the eighth section. Finally in the ninth section, the main results are summarized.

#### *I. Evaluation of Data*

As said earlier, we should study post-tax income distribution as well as the structure of taxes and public expenditures. Income tax data compiled by Central Board of Revenue and Household Income and Expenditure Surveys conducted by Statistics Division are the two main sources of data for analysing the post-tax income distribution. The tax rates, tax receipts, incidence of taxes, distribution of public expenditures data are reported in official publications and research studies which can be used to assess the impact of fiscal policy on income distribution.

Income tax data are being used in a number of countries to analyse personal income distribution. However, these data are of limited use in Pakistan because a very small fraction of population pays income tax, and any study based on income tax data will not be very meaningful as it will show distribution of personal income in a very limited range. Moreover, these data are very unreliable because of both the tax evasion and the tax avoidance. While very high tax evasion in developing countries is quite

well known, tax avoidance in Pakistan is also quite high because of the exemptions in the form of tax holidays, accelerated depreciation allowances, etc. Therefore, these data are of doubtful validity even when it is used to supplement data obtained from other sources.

Statistics Division of Pakistan has been conducting periodic Household Income and Expenditure Surveys. The first comprehensive survey has been conducted in 1963-64, followed by surveys in 1966-67, 1968-69, 1969-70, 1970-71 and 1971-72<sup>1</sup>. However, after 1971-72, survey has been carried out only for 1978-79, the results of which are expected during the current year. These surveys provide useful information on incomes and expenditures by various income groups of the household. Also provided in the survey reports are the data on number of persons and earners in a household. These data are particularly useful for decomposition exercises. Income and expenditure data are also available separately for both the urban and the rural areas. It also gives detailed break down of expenditures by commodities:

Household Income and Expenditure Surveys contain very useful data but these data suffer from various drawbacks. First, as noted by Bargan (8), the sample is relatively small for measuring income inequalities because the sampling error is quite large for thinly populated income groups. In particular, the number of observations for the upper range of incomes is very small and consequently income accruing to highest income group is seriously understated. This is also reflected in the fact that

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<sup>1</sup>Surveys were also conducted in 1959/60, 1964-65, 1965-66, and 1967-68. However, the surveys were done either for only rural or only urban areas, or they were conducted only for two quarters and thus missing the data for other two quarters. The survey for 1967-68 was quite comprehensive but unfortunately results of the survey were not compiled.

blown up gross national product obtained from the surveys is significantly smaller compared to gross national product obtained from national accounts. Second, there is a significant number of non-respondants in the sample. Since the non-response is concentrated in the highest income and lowest income groups, the income inequalities are seriously understated. Third, corporate savings (retained earnings) are not included in the earnings as defined in the survey. Since higher income groups are expected to have higher level of corporate savings, their incomes are further understated. Fourth, the decline in income inequalities will be overstated as Khandekar (19) has pointed out that 1962 rural-urban weights are employed to pool rural - urban data and 1962 data give lower weight to urban inequalities which are higher than the rural inequalities. From the preceding discussions, it follows that the Household Income Expenditure Surveys are expected to understate income inequalities and the growth of income inequalities over time.

In order to adjust for the understatement of income of the highest income group, survey data may be supplemented by income tax data. However, there are two problems with splicing of the two sets of data. First, because agricultural incomes are not taxed, we cannot adjust the incomes of the rural areas on the basis of these data. Azfar, who has spliced the two sets of data for 1966-67, used size distribution of farms by types of irrigation and tenure in order to compute incomes of higher groups in rural areas. However, he made a number of assumptions, some of which are quite restrictive. Second, even for the urban income distribution, income tax data are not very useful because of the tax evasion and tax avoidance. Therefore, it is no wonder that researchers such as Ayub (5) have concluded that we do not stand to gain much through splicing.

As regards the effect of taxation policies on income distribution only one study has been done to determine the incidence of taxes on cigarettes and petroleum products which account for 30 percent of excise taxes and another study analyses progressivity of taxes on the basis of certain restrictive assumptions. However, sufficient data do exist to determine the incidence of various taxes in various government reports, Central Board of Revenue and Household Income Expenditure Surveys. Similarly, the effect of public expenditures on various groups of population has not been studied but once again enough data exist to initiate studies in this direction.

## *II. Measurement of Inequalities in Personal Income Distribution*

In order to analyse studies which have been related to income distribution and effects of various policies on the welfare of different groups of population, we shall distinguish eight different types of studies. The eight groups of studies are as following:

- i) Measurement of inequalities in personal income distribution,
- ii) Estimation of poverty lines and number of persons categorised as poor, corresponding to various poverty lines;
- iii) Sources of inequalities by decomposing them into inequalities through various sources;
- iv) Effects of policies relating to industrialization on income distribution;
- v) Impact of Green Revolution on Distribution of Income;
- vi) Tax structure of Pakistan and its welfare implications;
- vii) Structure of public expenditures and its implications for income distribution;
- viii) Relationship of trends in income distribution to the demand for production factors.

However, in this section we shall only be concerned with the distribution of personal income.



Economists have always been interested in the distribution of income among different groups of population. However, generally speaking, their interest has been confined to the functional distribution of income i.e. distribution of income between labourers and the capitalists. Of course, these studies have shed light on important aspects of the economy, and are useful in their own right, but as far as inequalities in income are concerned, the studies on functional distribution of income are not very helpful unless we also know the asset distribution. It may be pointed out that such data are generally non-existent in developing countries. During recent years, the economists have given more attention to income distribution particularly to the personal income distribution.

Inequalities in personal income distribution may be measured in a number of different ways, e.g. Gini-coefficients, coefficient of variation, Champernowne Distribution, Pareto Distribution, Gamma Distribution, Atkinson Index, Theil's entropy index, etc. Since various measures may show significant differences in income inequalities and may even yield different trends, a reliance on single indicator can be misleading. Therefore, we need to analyse properly our data prior to deciding about using a measure of income inequality. However, in Pakistan, most of the studies have focussed on drawing the Lorenz Curve, estimating Gini-coefficients and sometimes estimating Pareto-coefficient as well.

Haq (13), Bergan (8), Azfar (7), Suleman (29), Khandkar (19), Nasim (22), Allauddin (3), Ayub (5), and Sadiq (27) have presented estimates of gini-coefficients for Pakistan. Some of these studies also report Pareto-coefficient and certain other measures of concentration. These studies differ in five important ways. First, different studies pertain to different periods of time. Second, the data employed in various studies show important

differences. While some studies are based on Household Income and Expenditure Surveys the others make use of income tax data while some studies splice the two sets of data. Third, while some studies consider inequalities in income, the others consider inequalities in the consumption expenditures. Fourth, while some studies are done for Pakistan as a whole there are others which have discussed rural and urban income distributions separately. Finally, some studies report income inequalities across households other report inequalities across population or earners. However interesting to note is that different studies based on the same source of data report different gini-coefficients. The authors have generally dismissed the differences as minor and due to the use of different formulae. However, neither the differences are insignificant, nor they can be explained merely in terms of changes in the formulae. In fact, these differences have largely been due to different group sizes employed in different studies. Except for Bergan (8), who classifies data in deciles prior to estimation of gini-coefficients, the researchers in general have employed House Income Expenditure Survey, in which intervals are not uniform.

Khadija Haq's study of income-distribution is one of the earliest and is based on income tax data. She has come to the conclusion that income distribution in Pakistan, is highly skewed but there has been a decline in the concentration ratios over time. However, since the income tax payers in Pakistan account for only one-half percent of the households her results are not very representative of the income distribution in Pakistan. As a matter of fact, what she has shown is the inequalities in personal income distribution of the highest income group.

Bergan (8) is the first comprehensive study of income distribution in Pakistan and is based on household income and expenditure survey data of 1963-64. Rearranging data by deciles, Bergan has computed gini-coefficients for both rural and urban areas of Pakistan which are reported in table 1. He found that income inequalities in Pakistan were little less than those in the other developing countries but argued that this may be due to the errors in data as they might have biased the income inequalities downward. It was also noted that inequalities in urban area were significantly higher than those in the rural areas.

Table 1

Gini-coefficients for 1963-64

Gini-coefficients	
Rural areas	0.357
Urban areas	0.430
Combined	0.381

Source: Bergan ( 8 ).

As discussed earlier, Household and Expenditure Survey data seriously understates the income accruing to the highest income group. In order to remove the bias, Azfar (7) spliced the survey data and the income tax data. However, the improvement of data through splicing is rather suspect as was discussed in section 1. Gini-coefficients for 1966-67 reported by Azfar and reproduced in table 2 below confirm Bergan's conclusions.

Table 2

Gini-coefficient for 1966-67

Gini-coefficients	
Rural	0.334
Urban	0.424
Combined	0.365

Source: Azfar (7).

As comparison of Azfar, Haq and Bergan studies suggest that income inequalities declined over 1963/64 to 1966/67 period. For example, income tax data shows that preto-coefficient is 1.21 in 1948-49, 1.51 in 1960-61 and 1.88 in 1966-67. These coefficients show a trend towards income equality. However, one should not try to read too much into the changes in the preto-coefficients as they are affected by a number of revisions in tax exemptions which tend to raise pareto-coefficient. A decline in income inequalities is also revealed by a decline in the gini-coefficient from 0.381 to 0.365. Since Azfar has spliced survey and income tax data his gini-coefficients may be overstated. Therefore, the decline in income inequalities may even be more pronounced.

In addition to inequalities in personal income, Azfar has studied inequalities in total receipts and consumption. Gini-coefficients corresponding to income, total receipts and consumption are reported below in table 3 which show that while consumption expenditures are distributed more equally than the income, inequalities in total receipts are even large.

Table 3  
Gini-coefficient Corresponding to  
Income, Total Receipts and Consumption  
for 1966-67

	Personal income	Total receipts	Consumption
Rural	0.334	-	0.304
Urban	0.424	0.470	0.370

Source: Azfar (7).

We have compared results of Azfar and Bergan studies, but strictly speaking they are not quite comparable. While Bergan adjusted for non-response, and arranged income data by deciles Azfar made neither of these adjustments. Azfar spliced the survey and income tax data, Bergan relied

exclusively on the survey data. Therefore, in order to study trends in income inequalities, the gini-coefficients at different points of time should be computed on the basis of comparable data.

Suleman (29) computed a number of inequality coefficients for both 1963-64 and 1968-69. Besides Gini-coefficients Suleman reports inter-quartile range test, coefficient of variation, etc. Unfortunately, he had highly aggregated data for 1968-69 and for comparison he had to aggregate data for 1963-64 as well. Contrary to the conclusions of a decline in income inequalities reached earlier <sup>by</sup> comparing Bergan and Azfar studies, Suleman shows an increase in the income inequalities over 1963/64-1968/69 period.

However, Suleman's study considers only six income groups which is quite a high level of aggregation. It is more instructive to analyse income distribution at more disaggregated level. On the basis of relatively more disaggregated data, Khandker (19) reports gini-coefficients of incomes for households, population and earners. In addition to personal income distribution he studied the functional distribution and the asset distribution.

Khandker has argued that the inequalities in income distribution of combined population are understated because income inequalities are higher in urban areas and weights of 1962 are smaller. He uses more recent weights to combine rural and urban inequalities and the gini-coefficients so computed for 1963-64, 1966-67 and 1968-69 in rural, urban and the combined population are reported in table 4.

Table 4

Gini-coefficient of Income for  
1963/64, 1966/67 & 1968/69

	1963/64			1966/67			1968/69		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Household income	.350	.366	.358	.321	.384	.346	.294	.364	.333
Population income	.221	.250	.228	.183	.260	.220	.162	.245	.205
Earners income	.243	.278	.260	.241	.296	.250	.183	.287	.238

Source: Khandker (19).

It is interesting to note from table 4 that income inequalities have declined over 1963-64 to 1968-69 period, while over the same period Suleman (29) found an increase in income inequalities. This shows a grave sensitivity of the gini-coefficients to the level of aggregation. It also shows that while income inequalities in urban areas decline in 1968/69 only after a rise in 1966-67, those in the rural areas show a continuous declining trend over time. That the income inequalities would rise upto 1966-67 is evident from the fact that the wages in the manufacturing sector did not rise while profits were multiplied two fold over this period as has been evidenced in Kemal (17). However, during 1968-69, the wage-earners demanded the increases. Consequently gini-coefficients are pulled down for the urban areas. As regards, the continuous reduction in income inequalities in rural areas, this may be due to Green Revolution and the controversial evidence regarding green revolution will be discussed in section 6.

Besides inequalities in the distribution of income, Khandkar has also studied inequalities in consumption expenditures as well and found that inequalities in consumption are significantly lower than inequalities in income.

As regards distribution of wealth, Khandker (19) has reported an asset distribution based on data obtained on farm size from Agriculture Census, housing distribution from Household Income Expenditure Survey and on size of companies from Investment Corporation of Pakistan. However, these data do not necessarily show the ownership of assets and as such the distribution of assets arrived at is not very reliable.

Similarly, his attempt to study functional distribution of income by using the household income and expenditure survey data by classifying wages and salaries as 'compensation to employees', income from self-employment as 'income of unincorporated enterprises', income from property including owner occupied houses & income from assets transfer and other incomes as 'others', is not very fruitful. That such an attempt is futile may be seen from the fact that compensation to employees declined from 30.8 in 1963/64 to 17.6 in 1966/67. Therefore, his conclusions are very unwarranted when he says that because the figures for 1966-67 and 1968-69 are reasonable, we should interpret these results as a decline in the share of income.

The most important conclusion of Khandker study is that income inequalities are not only high in the urban areas compared to those in the rural areas, but the difference in income inequalities in urban areas relative to those in rural areas is also rising over time. For example, while income inequalities in urban areas were 22% higher than those in the rural areas in 1963-64, they were 55% higher by 1968-69.

Ayub has made a comprehensive study of the income distribution in Pakistan which covers the period from 1963-64 and 1971-72. His study is extremely useful because he does not only report the gini-coefficients,

pareto-coefficient and the entropy measures but also decomposes inequalities into factor inequalities and analyses the effects of various policies on the distribution of income.

Ayub reports gini-coefficients of income for both household and the population and comes to the conclusion that up to 1970-71, there has been a decline in the income inequalities but there has been a sudden increase in the income inequalities during 1971-72. His estimates of gini-coefficients are reported in the following table.

Table 5

Gini-coefficients of income for 1963/64,  
1966/67, 1968/69, 1969/70, 1970/71 & 1971/72

	Household			Population		
	Rural	Urban	Combined	Rural	Urban	Combined
1963-64	.357	.400	.361	.212	.255	.226
1966-67	.316	.399	.355	.186	.235	.209
1968-69	.304	.289	.341	.179	.229	.197
1969-70	.294	.374	.327	.171	.216	.186
1970-71	.273	.325	.322	.160	.189	.187
1971-72	.312	.398	.351	.182	.235	.208

Source: Ayub ( 5 ).

Sadiq ( 27 ) has also analysed the income distribution and he has reported the following gini-coefficients:

Table 6

Gini coefficients of Income

	Total	Rural
1963/64	.347	.339
1966/67	.342	.313
1968/69	.326	.261
1969/70	.323	.292
1970/71	.315	.284
1971/72	.332	.293

Source: Nasim Sadiq ( 27 ).



While most of the studies discussed so far have focussed on inequalities in income distribution, supplemented by some of the authors with the inequalities in expenditures, Nasim ( 22 ) has focussed just on consumption expenditures. Though the distribution of consumption also reflect in a sense the distribution of welfare, but it does not reflect the distribution of income per se. Nasim ( 22 ) reports gini-coefficients for consumption for both households and population upto 1969-70. Talat Allauddin has extended his study upto 1971-72 and has also reported gini-coefficients for income. The following table gives the gini-coefficients of rural and urban areas for both, income and expenditure.

Table 7  
Gini-coefficients of Income and Expenditure

	Household				Population			
	Income		Expenditure		Income		Expenditure	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1963-64	.349	.374	.299	.331	.231	.256	.166	.213
1966-67	.330	.393	.299	.371	.199	.280	.151	.242
1968-69	.293	.381	.262	.361	.159	.262	.124	.243
1969-70	.291	.367	.262	.352	.161	.258	.122	.241
1970-71	.291	.363	.260	.337	.147	.241	.126	.209
1971-72	.310	.382	.273	.350	.166	.255	.127	.217

Source: Alauddin ( 3 ).

It may be noted that both expenditures as well as income gini-coefficients show an increase in the inequalities in the year 1971-72 after decline in the inequalities upto 1970-71. These results are in conformity with those of Ayub (5) reported above.

The studies on income distribution reviewed above shows that income inequalities in urban areas are higher than those in the rural areas but in both the areas they are falling over time. They also show that expenditures

are much more equally distributed than the income and distribution of income by households is more egalitarian than by the population. The latter result coupled with the fact that higher income groups have a large number of persons in the household reflects to some extent the dependence of unemployed, destitutes and servants on richer families. Therefore, the analysis of income distribution by household size should be preferable.

Income inequalities in Pakistan are seriously understated because of the relative neglect of higher income groups in the sample. Although some authors have concluded that trends in income distribution should not be affected because data are undercovered for all the years is not quite correct. This is so because if the share of higher income group in the GNP increases over time, the decline in income inequalities will be overstated. Therefore, there is a pertinent need to improve the quality of survey data and to supplement the existing data with some other sources which give the true picture of the increases of the highest income group.

### *III. Estimates of Poverty*

In the last section, we have reviewed studies on income distribution and came to the conclusion that over 1966-67 to 1970-71 period, inequalities in both income and consumption have declined. However, due to large sampling errors in case of highest income group arising largely due to its small coverage, these conclusions are little doubtful. Important to note is that even if there has been a fall in the gini-coefficient, it does not necessarily mean a decline in poverty as well. Hence, a need to study the problem of poverty separately from that of income distribution.

Estimates of the poor people in Pakistan have been made by drawing poverty lines at arbitrary levels. The studies done by Nasim (22), Alauddin (3) and Mujahid (20) do not make any attempt to estimate poverty line on a scientific basis. On the other hand, Wasey (30), on the basis of minimum nutrition required in terms of calories and proteins has estimated a poverty line for the urban areas by taking Rawalpindi city as representative of urban areas. However, unfortunately, he does not estimate the number of poor according to his poverty line.

Nasim has drawn two arbitrary poverty line, for both the rural and the urban areas. In order to make a valid comparison of changes in poverty over time, he has computed group specific price indices to deflate expenditure of different income groups. The two poverty lines for rural areas are drawn at Rs.250 and Rs.300 per capita per year in 1959-60 prices and for urban areas the two poverty lines are drawn at Rs.300 and Rs.375. On the basis of these poverty lines Nasim comes to the conclusion that poverty is widespread in both the rural as well as the urban areas. In rural areas, the number of persons below the lower poverty line, i.e. Rs.250 has declined significantly but according to the higher poverty line, i.e. Rs.300, number of persons have increased significantly. The percentage of households spending less than Rs.250 has fallen and less than 300 rupees per month has remained constant over time. In the urban areas on the other hand, percentage of poor households has declined corresponding to both the poverty lines, but the absolute number of households spending less than Rs.375 has increased. Alauddin (3) extended Nasim's analysis upto 1971-72 and draw four poverty lines instead of two poverty lines drawn by Nasim, in order to test sensitivity of estimates of poverty lines. She comes to similar conclusions reached by Nasim regarding the changes in poverty.

However, she has shown that estimates of poor people are very sensitive to the poverty lines. For example, in rural areas, poverty seems to have declined if we use Rs.250 as the poverty line, but the incidence of poverty has increased if instead, Rs.350 is used as the poverty line.

One feels quite uneasy at analysing poverty in terms of per capita expenditures because it is quite possible that very poor people are consuming their meagre assets and as such, the incidence of poverty has increased. Alauddin ( 3 ) has analysed the poverty problem in terms of incomes as well. She comes to the conclusion that incidence of poverty is relatively much higher in terms of incomes compared to that in terms of expenditure. For example, in terms of real expenditure, there was hardly any poor person, below a poverty line of Rs.225 but about one-fifth of population can be classified poor if we use the same poverty line in terms of real income. Table 8 to 11 give the estimates of poor according to various poverty lines.

Table 8

Incidence of Poverty in Rural Areas in Terms of  
Real Expenditure

Years	Number of poor persons corresponding to poverty lines of				Percentage of rural population classified as poor corresponding to poverty lines			
	Rs.225	Rs.250	Rs.300	Rs.350	Rs.225	Rs.250	Rs.300	Rs.350
1963-64	9.97	16.53	23.20	31.83	26.0	43.1	60.50	83.01
1966-67	6.15	13.13	24.49	32.86	15.0	32.0	59.7	80.10
1968-69	4.19	10.76	26.37	31.66	10.0	25.1	61.5	75.49
1969-70	-	11.40	26.18	32.14	-	26.0	59.7	73.27
1970-71	-	4.15	24.59	36.70	-	9.3	54.8	81.75
1971-72	0.09	8.82	26.83	40.16	0.2	19.1	58.4	87.42

Source: Alauddin ( 3 ).

Incidence of Poverty in Rural Areas in  
Terms of Real Income

Year	Number of poor persons corresponding to poverty lines of				Percentage of rural population classified as poor corresponding to poverty lines			
	Rs.225	Rs.250	Rs.300	Rs.350	Rs.225	Rs.250	Rs.300	Rs.350
1963-64	12.86	21.66	25.83	30.69	32.5	56.5	67.4	80.0
1966-67	6.93	12.65	20.01	25.19	15.6	30.8	48.8	61.4
1968-69	9.97	15.81	27.37	32.84	23.2	36.9	63.8	76.6
1969-70	9.19	15.62	26.79	35.89	21.0	35.6	61.1	81.8
1970-71	5.22	12.82	26.99	35.53	11.6	28.6	60.1	79.2
1971-72	8.87	19.10	29.77	39.99	19.3	41.6	64.8	87.0

Source: Alauddin ( 3 ).

Table 10

Incidence of Poverty in urban areas in  
Terms of Real Expenditure

Year	Number of poor persons corresponding to poverty lines of				Percentage of rural population classified as poor corresponding to poverty lines			
	Rs.225	Rs.250	Rs.300	Rs.350	Rs.225	Rs.250	Rs.300	Rs.350
1963-64	1.08	6.55	8.37	8.85	9.0	54.8	70.0	74.0
1966-67	0.95	6.47	8.17	8.73	6.9	47.0	59.3	63.4
1968-69	0.49	5.59	8.75	10.76	3.2	34.7	57.9	67.9
1969-70	0.58	4.27	9.30	10.78	3.7	25.0	58.8	68.1
1970-71	0.35	4.54	9.84	11.22	2.1	27.5	59.3	67.6
1971-72	4.27	14.27	10.93	12.21	2.6	24.7	62.8	70.2

Source: Alauddin ( 3 ).

Table 11

Incidence of Poverty in Urban Areas in  
Terms of Real Income

Year	Number of poor persons corresponding to poverty lines of				Percentage of rural population classified as poor corresponding to poverty lines			
	Rs.225	Rs.250	Rs.300	Rs.350	Rs.225	Rs.250	Rs.300	Rs.350
1963-64	1.64	5.92	8.49	9.23	13.7	49.6	71.0	77.2
1966-67	2.93	6.04	8.49	9.36	10.3	43.6	61.7	68.0
1968-69	1.83	5.67	9.14	9.36	10.1	32.6	60.5	68.8
1969-70	1.08	4.69	9.53	10.76	6.9	29.7	60.2	67.6
1970-71	1.18	5.12	9.88	11.16	7.1	30.8	59.6	67.3
1971-72	1.47	4.69	10.86	12.04	8.5	17.0	62.4	69.3

Source: Alauddin ( 3 ).

Alauddin (3) has also estimated calorie intakes in rural as well as in the urban areas. The calorie intake in rural areas is higher than that in the urban areas but has declined from 1988 in 1963-64 to 1898 calories per person per day by 1971-72. On the other hand calorie intake in urban areas has remained constant around 1700. It shows that poor remain undernourished, and undernourishment in rural areas has even increased.

Mijahid (20) has objected to the methodology employed by both Nasim and Alauddin in estimating number of persons falling below the poverty line. He has very correctly argued that implicit assumption in the derivation of the cumulative distribution by both Nasim and Alauddin is that expenditure of each individual in a given household income group equals the average expenditure for that particular group. Of course such an assumption renders the cumulative distribution and estimates of poverty meaningless. A better procedure would be to interpolate income in case of each income group. Mujahid (20) using the linear interpolation finds interesting results which are reported in table 12 below. Mujahid shows a significantly less incidence of poverty in both rural and urban areas during the early years. However, poverty seems to have increased in the rural areas which is contrary to the results obtained by Nasim. Similarly, even though Mujahid found a decline in the urban poverty yet the decline is quite insignificant compared to that reported in Nasim.

That the income distribution is improving and poverty is declining but undernourishment is increasing needs to be analysed further. This could be due to the demonstration effect because of which the poor have to shift their expenditures away from food to other products while their incomes have remained constant. If, this is true then it has important implications for the solution of poverty problems because it implies that transfer in kind should be preferred over transfers in cash.

Table 12

Percentage of Population Poor: A Comparison  
of Nasim and Mujahid Studies

Years	Poverty line of Rs. 250		Poverty line of Rs. 300		Poverty line of Rs. 300		Poverty line of Rs. 375	
	Nasim	Mujahid	Nasim	Mujahid	Nasim	Mujahid	Nasim	Mujahid
1963-64	43.1	29.2	60.5	41.6	56.5	30.0	67.4	55.0
1966-67	32.0	40.6	59.7	55.8	30.8	38.5	48.8	54.0
1969-70	26.0	39.8	59.7	52.6	35.6	33.7	61.1	51.0

Source: Mujahid (20).

#### *IV. Decomposition of Income Inequalities*

We have seen in the above two sections that income inequalities have decreased over time and that the number of very poor persons has also declined. However, an excessive concern with overall inequality of income may conceal important factors which tend to widen or equalise the income inequalities at a disaggregated level. A disaggregated analysis throws useful information on sources of income inequalities which is quite useful in formulation of policies to reduce income inequalities.

The overall income inequalities can be decomposed into three main factors, viz. the reallocation effect, the functional distribution effect and the factor concentration effect. The reallocation effect measures changes in the total gini-coefficient due to a reallocation of resources from one sector to the other. Functional distribution effects are the changes in total gini-coefficient arising due to shifts in the relative factor shares within a sector. Finally, the factor gini effects measure changes in the total gini due to changes in the factor ginis over time.

Ayub (5) classified factor income on the basis of household income and expenditure survey into the following three components: (i) wage income,

(ii) property income; and (iii) self-employment incomes. The decomposition of factor gini's have been done for both the rural and urban areas. Results are reported in table 13, 14 and 15.

Comparing the wage income in rural and urban areas, the decomposition analysis shows that wage incomes in urban areas are distributed more unequally than are the wage incomes in rural areas. This is in accordance with a-priori expectations, because the urban labour force is heterogeneous, differentiated by skill, education, union membership, coverage by the minimum wage legislation etc. However, the differences in inequalities are narrowing down because of an increase in the labour differentiation in rural area. In the urban sector, perhaps, the most critical factor affecting wage income inequality has been the role of government. Some deliberate attempts were made to increase the wages of the poor and thus reducing the difference in wages across different groups of people. see Irfan (15).

Urban self-employment income is more concentrated than the rural self-employment income. In rural areas, self employed are quite homogeneous while in the urban sector they include from wealthy businessmen to poor workers in the informal sector. This leads to very high skewed distribution of income in the self employed people. The gini-coefficients for self employment have fallen by about 17 percent. Since in the rural areas, share of self employed in total output is 19 percent, income inequalities in the rural area is significantly reduced.

Urban property income gini is about 35% than the rural property income gini, which reflects more unequal distribution of assets in the urban areas. It may be noted that in the urban sector, the property gini which was already high, i.e. .746 in 1963-64 increased further to .819 by 1971-72. This is



Table 13

## Gini Decomposition for All Households

		1963/1964	1966/1967	1968/1969	1969/1970	1970/1971	1971/1972
1.	Factor Gini $G_V$	0.438	0.416	0.412	0.387	0.380	0.409
2.	$G_\pi$	0.299	0.580	0.585	0.599	0.641	0.683
3.	$G_S$	0.325	0.318	0.308	0.306	0.277	0.306
4.	Total Gini $G_Y$	0.361	0.355	0.341	0.327	0.322	0.351
5.	Factor $\phi_W$	0.176	0.189	0.189	0.203	0.188	0.185
6.	Distributive $\phi_\pi$	0.028	0.039	0.039	0.047	0.048	0.058
7.	Shares $\phi_S$	0.711	0.681	0.684	0.651	0.672	0.648
8.	Sample Size	4,989	6,851	7,046	7,235	7,371	7,296
9.	Mean nominal Income (Rupees/Mo)	202.63	250.20	253.10	262.62	274.63	311.96

Source: Ayub

Note:  $G_W$ ,  $G_\pi$  and  $G_S$  refer to gini coefficients of wage earners, property owners and the self employed  $\phi_W$ ,  $\phi_\pi$  and  $\phi_S$  refer to shares of wage earners; property owners and the self employed.

Table 14

## Gini Decomposition for Rural Households

		1963/1964	1966/1967	1968/1969	1969/1970	1970/1971	1971/1972			
1.	Factor Ginis	$G_W$	0.185	0.184	0.187	0.269	0.271	0.342		
2.		$G_\pi$	0.436	0.602	0.455	0.542	0.551	0.625		
3.		$G_S$	0.362	0.331	0.319	0.274	0.253	0.292		
4.	Total Gini	$G$	0.357	0.316	0.304	0.294	0.273	0.132		
5.	Factor	$\phi_W$	0.100	0.098	0.098	0.106	0.085	0.103		
6.			Distributive Shares	$\phi_\pi$	0.027	0.033	0.031	0.042	0.041	0.045
7.				$\phi_S$	0.800	0.790	0.783	0.761	0.792	0.762
8.	Sample Size		2,782	2,589	2,702	2,764	2,356	2,770		
9.	Mean Nominal Income (Rupees/Mo)		193.24	198.36	189.87	197.24	208.79	234.43		

Source: Ayub (5)

Note:  $G_W$ ,  $G_\pi$  and  $G_S$  refer to gini coefficients of wage earners, property owners and the self-employed  
 $\phi_W$ ,  $\phi_\pi$  and  $\phi_S$  refer to shares of wage earners, property owners and the self-employed.

Table 15

## Gini Decomposition For Urban Households

		1963/1964	1966/1967	1968/1969	1969/1970	1970/1971	1971/1972	
1.	Factor Ginis	$G_W$	0.458	0.425	0.375	0.377	0.318	0.388
2.		$G_\pi$	0.746	0.750	0.761	0.766	0.754	0.819
3.		$G_S$	0.428	0.397	0.382	0.346	0.357	0.412
4.		Total Gini	$G_Y$	0.400	0.399	0.389	0.374	0.325
5.	Factor Distributive Shares	$\phi_W$	0.368	0.362	0.324	0.349	0.370	0.330
6.		$\phi_\pi$	0.033	0.038	0.047	0.037	0.038	0.055
7.		$\phi_S$	0.579	0.501	0.523	0.489	0.489	0.484
8.	Sample Size	2,207	4,262	4,344	4,471	4,515	4,524	
9.	Mean Nominal Income (Rupees/Mo)	235.57	280.50	293.43	302.93	316.56	360.54	

Source: Ayub (5)

Note:  $G_W$ ,  $G_\pi$  and  $G_S$  refer to gini coefficients of wage earners, property owners and the self-employed.

$\phi_W$ ,  $\phi_\pi$  and  $\phi_S$  refer to shares of wage earners, property owners and the self employed

largely due to the fact that the large scale enterprises received huge incentives in terms of tax exemption and concessionary credits which coupled with the licensing procedures of the government led to a very skewed distribution of both industrial and financial assets.

Taking into consideration the shares of different groups in the total income and changes in the factor ginis, Ayub (5) came to the following conclusions.

The wage gini and the self-employment income gini were equalising forces while changes in property income and property and wage income share tended to enhance total inequalities. For rural households, while changes in self employment income as well as in its shares have tended to reduce inequalities, changes in wage income and changes in the share of property income are the main factors in enhancing income inequalities. For urban households, changes in the gini for wage and self employment incomes and share of wage income tend to reduce total inequality while changes in property income and its share tend to increase total inequality.

Factor ginis throw important light on the changes in income inequalities. But besides factor ginis, the overall income inequalities compose of the other two factors viz, reallocation and functional distribution. However, Ayub's analysis of reallocation and functional distribution is rather disappointing. In his analysis of resource allocation he argues that because of substantial migration from rural to the urban areas the rural income has gone down from 61% in 1950-51 to 52 percent in 1974-75. By taking into consideration the increase in share of non-agricultural income from 21.3 to 32.7 percent, and noting that non-agricultural income is more unequal, he has concluded that reallocation of resources has led to an increase in income inequalities.

As regards functional distribution on the basis of the fact that the share of profit is nearly the same for both rural and urban areas but the share of wages in urban areas is significantly higher, he argues that the relative wage profit ratio is everywhere higher for the urban areas than for the rural areas. However, this observation is not very plausible because of the erroneous definition of profits for the rural areas employed by Ayub. He notes that wage-property share ratio for all the households fall over time and thus the changes in functional distribution leads to accentuation of income inequalities. Table 16 shows the consolidated effects on income inequality of functional distribution, factor incomes and the reallocation from agricultural to non-agricultural sector.

#### V. *Industrialization and Income Distribution*

Industrialization affects income distribution in a number of ways. It affects the sectoral composition, occupational structure, the demand for production factors and the functional distribution of income.

Different industrial strategies have different effects on functional distribution and the personal distribution of income. For example, import substitution policy increases the return to scarce factor and in a labour surplus economy would accentuate the inequalities in income distribution. Moreover, because markets for most of the products in the developing countries are rather small, oligopolistic structure of the market prevails. When imports are severely restricted in addition to oligopolistic structure of the markets, the producers charges prices well above their marginal costs. This further raises return to capital and income inequalities worsen. On the other hand, if outward looking policies are pursued, demand for factors will be according to the comparative advantage and in a labour surplus economy labour demand will grow faster and thus improving functional distribution of income.

Table 16  
 Decomposition of Income Inequalities in Pakistan  
 1971-72

	Average Annual Change in Total Inequality	(Net)Factor Gini Effect	Reallocation Effect	Functional Distribution Effect
Before 1971/72	-0.0048 (-0.0056)	-0.0055 (-115%)	+0.0006 (+ 12%)	+ 0.0001 ( + 2%)
All Households 1971/72	+0.0290 (+ 0.0290)	+0.0266 (+02%)	+0.0002 ( + 1%)	+0.0022 ( + 8%)
Before 1971/72	-0.0112 (-0.0120)	-0.0118 (-105%)	-0.0003 (-3%)	+0.0009 ( +8%)
Rural Households 1971/72	+0.0398 (+ .3900)	+0.0403 ( + 101%)	0.0002 (+1%)	-0.0007 (-2%)
Before 1971/72	-0.0086 (-0.0170)	-0.0088 ( -102%)		+0.0002 ( + 2%)
Urban Households 1971/72	+0.0631 (+0.0730)	+0.0549 (+87%)		+0.0082 (+13%)

Source: Ayub (5)

Unfortunately, very little work has been done on the effects of different growth strategies on income distribution in Pakistan. Ayub (5) has tried to analyse the effect of inward looking policies vis-a-vis the outward looking policies on distribution of income, but very regrettably his analysis is quite misleading. To describe 1959/60 to 1964/65 period as a period in which Export Oriented Policies were pursued in Pakistan and the period from 1965-66 onwards as a period in which import substitution policies were pursued, does seem odd. Though it is true that quota restrictions were imposed in 1965-66 after the war, yet incentives to exports, were also strengthened. Moreover, his analysis does not correspond to the time periods he has suggested. For example, according to his demarkation of the periods, a decline in income inequality over 1963/64 to 1966/67 period cannot be treated as an achievement of outward looking policies and an increase in income inequalities over 1968-69 to 1971-72 as a result of import substitution policy. It may be noted that if we accept 1964-65 to be the last year of outward looking policies, the decline in income inequalities upto 1966-67 should be a reflection of change over to inward looking policies. Therefore, conclusions drawn by Ayub (5) regarding the effect of inward or outward looking policies on distribution are unacceptable.

White (31) and Kemal (17) have studied the distribution of industrial and financial assets and they analyse the effect of industrialization on functional income distribution. White (31) discusses the skewness of industrial and financial assets in Pakistan but he does not discuss changes in the asset distribution over time.

The effect of industrialization on returns to capital and wages is discussed in Kemal (17). By relating productivity gains to changes in relative prices, rate of return to capital and wages, it was found out that while productivity of manufacturing sector during the Sixties increased at a rate exceeding five percent, relative prices of the manufacturing sector hardly declined and productivity gains were distributed between production factors employed in the manufacturing sector. Although wages also increased a little, the major part of productivity gains have resulted in a significant increase in the return to capital, i.e. doubling the average rate of return to capital over 1959/60 to 1969/70 period. A very high rate of increase in return to capital relative to wages resulting in changes in functional income distribution in favour of capitalist point to a very strong possibility of an increase in income inequalities in urban area. However, we saw earlier that urban income inequalities have declined over time. How can we resolve these conflicting results? It can be argued that besides large scale manufacturing sector, small scale industries also grew very rapidly. However, since large scale industries grew at a more rapid rate than the small scale industries and the profit rates in large scale industries were excessive, decline in urban income inequalities observed earlier cannot be explained by growth of the small scale industries. The decline in urban income inequalities shown by the survey data possibly is due to the fact that these data almost completely ignores the incomes of the industrialists and precisely these are the industrialist who have increased their share in income of overtime.

While rate of return to capital has increased very rapidly, wages also increased, though at a less rapid rate. We have reproduced trends in wages reported in Irfan (15) in table 17, which show a significant increase in wages over time. It follows that we should expect a decline in poverty.



Table 19

Real Wages in the Manufacturing Sector of  
Pakistan

Year ,	Real Wages (Rs.)
1954	1122
1955	1058
1957	1059
1958	1094
1959-60	1091
1962-63	960
1963-64	1088
1964-65	1180
1965-66	1245
1966-67	1189
1967-68	1116
1969-70	1351

Source: Irfan (15)

It is generally argued that even though the real wage in the formal sector rise, incidence of poverty in urban areas will rise because higher wages accelerate migration from the rural areas. Since they are unable to find employment in the formal sector, they remain under-employed in the informal sector and as such incidence of poverty may increase. Though the incidence of poverty in informal sector is relatively higher, yet the percentage of extremely poor in the informal and formal sector is roughly the same as shown in table 18.

Table 18

Poverty in Formal and Informal Sector  
of Rawalpindi

	Percentage of Persons in		
	Informal Sector		Formal Sector
	Employees	Self-employed	Employees
Above poverty	66	68	78
Requiring less than Rs.100 to meet their basic needs	20	14	10
Requiring more than Rs.100 to meet their basic needs but less than 250	9	13	8
Requiring more than 250 to meet basic needs	5	5	5

Source: Irfan (15).

Table 19

Average Intake of Calories, Protein and Fats

	<u>Calories</u>	<u>Proteins</u>	<u>Fats</u>
1959-60	1800	44 gms	20 grms
1969-70	2100	48 gms	20 grms

Source: Irfan (15).

Therefore, from the above discussion we may conclude that though the decline in income inequalities remains doubtful, yet there is ample evidence to support the conclusion that poverty in urban areas has declined.

#### VI. Green Revolution and Income Distribution

Green Revolution has resulted in an unprecedented growth of agricultural sector in Pakistan during the second half of the Sixties. However, it has remained quite controversial as to who got the maximum benefit out of the green revolution. On the one hand Gotsch (11), Falcon (10) and following them some of the Pakistani economists such as Khan (18) have argued that green revolution has led to very high income inequalities in the rural areas. Their argument basically revolves around the indivisibilities of technology and sound financial position of the landlord coupled with their easy access to credit. On the other hand Kaneda (16) and Chaudhary (9) have denied the existence of indivisibilities of technology and have argued that because the small farmer can use tubewell and tractor services and that the smaller farmers are more productive, green revolution should tend to reduce income inequalities. In the following, we shall discuss both the arguments and analyse the empirical evidence.

Green Revolution affect income distribution through three different ways. First, by changing composition of the farms by size. Second through differences in the impact of green revolution on productivity across farms of various sizes. And third, its effect on the demand for labour.

Falcon (10), Gotsch (11), Pearse (24), Alavi (4) and Griffin (12) have argued that green revolution would lead to an increase in the size of the holdings of large farmers. They argue that with the rising profitability of agriculture under the green revolution, the large farms would be induced to undertake self-cultivation on their own holdings and may even rent additional land from neighbouring small and medium farms to increase their profits. Unfortunately, none of these authors provide any empirical evidence to support their contention for Pakistan. Chaudhary (9) on the basis of Agriculture census data report that land concentration has actually declined as shown in table 21.

Table 21

Cumulative Land Shares

	1960	1972
Lowest 10 percent farm	0.46	0.88
Lowest 20 percent farm	1.44	3.02
Lowest 30 percent farm	3.00	6.07
Lowest 40 percent farm	6.00	10.60
Lowest 50 percent farm	9.72	16.99
Lowest 60 percent farm	15.79	24.47
Lowest 70 percent farm	24.91	32.75
Lowest 80 percent farm	36.68	44.88
Lowest 90 percent farm	53.76	59.14
Lowest 100 percent farm	100.00	100.00
<u>Land Concentration</u>		
Farm Acre	0.616	0.542
Cultivated area	0.582	0.468
Cropped area	0.529	0.424

Source: Chaudhary (9).

However, while data reported in table 21 do not support the contention of Gotsch, Falcon and others, yet the evidence is not very conclusive to reject their hypothesis either, because a decline in concentration may in itself be due to inheritance laws and land reforms. If one also notes that there has been some increase in the land operated by the medium and large farms, it does show a slight increase in the land operated by large farms due to the green revolution.

As regards changes in productivity across various farm sizes due to green revolution it is generally assumed that income inequalities would rise as large farmers use more modern inputs. It is argued that modern inputs especially tubewells and tractors are basically indivisible and require lump sum investment and generally are beyond the financial power of small farmers. It is further argued that these indivisibilities are carried over to the use of fertilizer because irrigation water is a necessary complementary input for the use of fertilizer. Extension services, research credit and incentive programmes of the government, it is argued, exclusively benefits the large farmers. However, these arguments are not well substantiated by data.

Chaudhary, (9) on the other hand has argued that neither there are necessarily indivisibilities nor the empirical evidence supports these contentions. He argues that though ownership of tubewells and tractors is concentrated in the lands of large farmers, yet it does not necessarily imply that small farmers do not use tractors and tubewells. They have an access to the use of tubewells and tractors and thus indivisibilities are largely reduced.

Using Agriculture Census Data, Chaudhary has shown that while 37 percent of the large farms use tubewells, 24 percent of the small farmers also use them. Similarly 33 percent of the large farmers use tractors but 16 percent of the small farmers also use tractors. Moreover, Punjab Planning and Development Statistical Survey Unit (25) has reported that small farmers applied 41 nutrient pounds of fertilizer as against 75 pounds used by large farms per acre. Azam (6) showed that on average small farmer use about 60 pounds fertilizer while large farmer use 75 pounds fertilizer on an acre. These figures very clearly show that large farmers do use more modern inputs, but as pointed out by Chaudhary (9), the growth rate of modern inputs use is significantly higher for small farmers compared to the use of modern inputs by large farmers. For example, small farmers show a 200 percent growth rate as against 40 percent growth in the fertilizer use of large farmers.

Therefore, it follows that though the use of tractors, tubewells and fertilizer is rather high on the large farms, yet the use of inputs has grown rapidly on the small farmers, which shows the effect of green revolution.

Using Family Accounts and Family Budgets of Cultivators in Punjab data, Chaudhary has reported the net and gross revenues of small and large farmers. He concludes that there is a strong inverse relationship between farm productivity and the size and that the productivity differences between small and large farms have been widening. Using the revenues per acre and the size of farm, Chaudhary has computed farm incomes and comes to the conclusion that incomes on smaller farm have increased more rapidly. This suggest a decline in income inequalities over time.

It is generally argued that green revolution leads to a lower demand for labour because of the following five factors. See Chaudhary (9).

- i) The large farmers adopt self-cultivation and thus lead to eviction of tenants;
- ii) Those who retain the tenancies are left with smaller farms;
- iii) Mechanization leads to displacement of labour;
- iv) Crop pattern changes in a way that these products are grown which are less labour intensive and
- v) There are no job opportunities elsewhere.

That the tenant income falls with green revolution has been contested by Chaudhary on the basis of FAFB data, which shows that incomes of big landlords and peasant proprietors increased at an annual compound rate of 15.2 and 13.3 percent respectively, against incomes of tenant increasing by 19.3 percent per annum. This negates the impression that tenants income have fallen.

On the basis of scanty and scattered evidence Chaudhary has come to the conclusion that tubewell installations, increased fertilizer use and introduction of high yielding varieties lead to higher demand for labour.

As regards rural wages, the data are not very reliable and come from different sources. However, whatever data are available, shows an appreciable increase in wages, reported in table 22

Table 22

Rate of Growth of Rural Wages

	<u>Growth in Real wages</u>
1951-52 to 1959-60	1.81
1959-60 to 1964-65	2.09
1964-65 to 1969-70	8.01
1969-70 to 1974-75	6.35

Source: ( 9 )

The table shows that over long-run rural wage rates have been consistently rising throughout the period under consideration. This result coupled with the earlier results of higher productivity of small farmers lead us to conclude that income inequalities may fall and the following table shows the declining trends in rural income inequalities.

Table 23

## Concentration Ratios in Rural Areas

	<u>Household</u>	<u>Population</u>
1959	0.348	0.228
1961	0.357	0.203
1963-64	0.348	0.223
1966-67	0.319	0.186
1968-69	0.294	0.161
1969-70	0.295	0.161
1970-71	0.291	0.146
1971-72	0.308	0.164

Source: Chaudhary (9).

### VII. Tax Structure and Income Distribution

Importance of public revenues and public expenditure in income distribution cannot be exaggerated. On the one hand, distribution of income determines the types of taxes and level and composition of the public expenditures especially via the political and social structure which are influenced by income distribution. On the other hand, public revenues and expenditures affect both directly and indirectly the income distribution.

Pakistan relies rather heavily on indirect taxes for the revenues and direct taxes constitute only one tenth of the total tax receipts. Customs duties, excise duties and sales taxes form bulk of the total tax receipts in Pakistan. Indirect tax are generally assumed to be regressive

because they are shifted on to the consumers and that the consumption expenditures are distributed more equally than income. However, while the latter is true, the former does not always hold. Indirect taxes may not shift and when they are shifted, they are not necessarily regressive unless they fall heavily on the necessities. Therefore, unless a comprehensive analysis of tax structure is carried out, we cannot pass judgement whether the structure is regressive or progressive merely by looking at the share of indirect taxes in total receipts.

There is generally a dearth of studies on Pakistan's tax structure. Radhu (26), Naqvi (21), Pal (23) and Alamgir (1) have studied the problem of forward shifting but did not analyse incidence of taxes in Pakistan. Only Irfan (14) has studied the incidence of indirect taxes but unfortunately his study is limited to only two products, viz. Tobacco and petroleum products. In an unpublished study, Alauddin and Raza (2) have analysed the progressivity of tax structure in Pakistan but unfortunately they have disregarded all the studies on tax shifting. Before, we discuss the usefulness of these studies and data limitations we briefly review the studies which have been done so far in this area.

By regressing changes in prices against changes in excise and sales taxes, Radhu (26) concluded that indirect taxes in Pakistan are not shifted forward. In the period covered by Radhu, i.e. the Fifties and the early Sixties, such a conclusion will not be surprising because of quota being the effective constraint in determining the domestic prices of imports and domestically produced goods. However, his results may be biased because the products which contribute most to excise and sales taxes have negligible representation in his sample. It is interesting to note that he has included only one observation from the Petroleum and tobacco products which account for more than 30 percent of the total indirect taxes.



Pal (23) and Alamgir (1) compared the domestic prices of imported goods with their c.i.f. prices and have concluded that because license holders earned significant profits, therefore, any increase in the import duty was expected to be borne by the license holder, and not shifted on the consumers. However, neither the quota restrictions are that binding in the Seventies, nor they determine the prices of goods produced domestically. Therefore, conclusions of Radhu, Pal and Alamgir are not expected to hold any longer in Pakistan. Naqvi (21) by taking into consideration changes in the excise and sales taxes during the Sixties and the Seventies she concluded that in general, taxes on consumer goods were shifted onto the consumers while the indirect taxes on raw materials were not necessarily shifted on to their users. In particular, taxes on cigarettes, petroleum products, chemicals, cotton fabrics, food products and miscellaneous products were shifted onto the consumers.

Irfan (14) has studied the incidence of excise duties and sales taxes on cigarettes and petroleum products. For such a study we have to allocate tax revenues to various groups of population on the basis of consumption pattern. Household Income Expenditure Survey do provide data on consumption patterns of different groups. Irfan has confronted these data with those collected by the cigarette manufactures and as a result has discarded the Household Expenditure Survey data. Interesting to note is that the Household Expenditure Survey showed that taxes on cigarette are regressive while the data provided by cigarette manufacturers showed them as progressive. Can we discard data just because it does not show our a-priori expectation and does not fit in with another set of data?

For motor spirit, the incidence of taxes has been computed on the basis of number of vehicles and their average rate of motor spirit consumption. Indirect taxes on petroleum turns out to be progressive.

While Irfan has suggested that tax structure may be progressive yet as he himself pointed out that a study based on two products will necessarily show a partial picture. Therefore, his results of tax progressivity are not very conclusive. Alauddin and Raza (2) have studied the whole tax structure of Pakistan. They have considered both direct and indirect taxes into consideration. Data on payments of direct taxes by different groups of population have been taken from the Household Income Expenditure Survey. They have estimated the incidence of indirect taxes by taking into consideration the consumption pattern from the surveys. They have assumed that all the excise and sales are completely shifted onward to the consumers. However, it is implicit in their analysis that import duties are not shifted. To the extent, imports of consumption goods are subjected to tariffs, their results may be biased. However, the bias may not be large even though import duties form a major proportion of total indirect taxes because the imports of consumer goods forms a very small proportion of the total imports and of these food imports form a substantial proportion which are not subjected to high import duties. However, the imports of other consumers goods are those of consumer durables which are subjected to high import duties and as such results are biased towards regressivity.

It follows from the above analysis that the studies done so far are only suggestive and they indicate that tax structure of Pakistan is regressive. Alauddin and Raza (2) study can be improved by incorporating the incidence of import goods. Of course, it is difficult to get the distribution of imported goods across various income groups, yet because of their importance,

their neglect may bias the results significantly. Therefore, such data need to be collected. Moreover, the study has neglected pricing policies of the government. For example, indirect taxes implicit in motor spirit is different from indirect taxes on motor spirit. Therefore, the tax structure studies need to be extended in a number of directions.

Even though tax structure studies are important in their own right, from income distribution point of view these studies lose much of their importance, if we do not take into consideration public expenditures simultaneously. It is well known that marginal utility of income declines with income. Therefore, allocation of equal amounts of benefits from public goods paid for through a proportional tax structure would actually redistribute income towards upper income groups. Therefore, it is not very useful to study progressivity of tax structure in isolation from the public expenditures if we want to derive implications for income distribution.

Unfortunately, public expenditure is a neglected field in the research on Pakistan economy. No attempt has been made to study the determinants of the level and composition of public expenditure to discern the effective power centers of the society. Such an information will be extremely useful in the implementation of certain policy formulations. Moreover, no attempt has been made to analyse the effectiveness of policies especially in the context of the effect of various government policies on income distribution.

In Pakistan, education and health facilities are subsidised, but their benefits are restricted to only a class of people. There has been no study to analyse their impact on various groups of people. Similarly, about a quarter of public spending is on the subsidies, a bulk of which form

consumption subsidies to wheat and vegetable ghee. No study tries to assess their impact on various groups of population. Biases in allocation of credit to various sectors which have a built-in-subsidy elements are not studied either. Since these factors are of prime importance in reallocation of income, partial income distribution studies are not going to be very useful.

#### VIII. *Demand for Production Factors and Consumption Patterns*

Production structure of a country is largely determined by demand for her products. Therefore, the consumption pattern of a country determine largely the structure of production. Income redistribution is certainly going to affect the overall consumption pattern of an economy in which goods demanded by relatively poorer persons are given more weight. If the goods consumed by poorer persons have lower capital intensity and higher labour intensity, then the income redistribution will not only probably raise the growth rate but the initial income redistribution will also be strengthened. In a number of countries, such studies have been done but evidence is controversial evidence. The first such study was done on Pakistan by Soligo (28). He found that capital intensity declines at first but then increases as we move from lowest to highest income group. The dip in the medium level of income group is due to the fact that the poor spends larger proportion of expenditures on food and textiles, These two are very capital intensive in Pakistan. Similarly, if we exclude construction activities, the consumption pattern of the lowest income group is most labour intensive, but by including construction, the highest income group shows the most labour intensive consumption pattern.

Although Soligo did find that the rural consumption pattern is less capital and more labour intensive and that the consumption of poorest class in urban and rural areas is more labour intensive and less capital intensive but his results were not very conclusive. As pointed out by Soligo himself his analysis suffered from a number of shortcomings in data. To start with he used average rather than marginal capital output ratios. When the capital output ratio show a declining trend, the marginal capital output ratio will be smaller than the average capital output ratio. Especially in the manufacturing sector of Pakistan, as shown in Kemal (17), capital-output ratio fell significantly over time. In particular, capital output ratios of food and textiles fell from 3.15 in 1959/60 to 1.90 in 1969/70. Since these two products form a significantly higher proportion of expenditure in case of poorer people, Soligo results are very heavily biased. Similarly, while Soligo has used book values of assets for other sectors, he has used market value of assets for agriculture. Since the former are seriously understated due to high depreciation allowances, and unaccounted price changes, agriculture turns out to be more capital intensive than the manufacturing activities except food and textiles. This again introduces a bias in the same direction. Aggregation is another source of problem in his analysis. On the one hand, he has lumped all food items in one category of which the poor may be consuming only labour intensive goods. On the other hand, no distinction has been made if the output has originated in the small or in the large scale. This distinction is quite important as Yhi-Min-Ho (3) found out for Taiwan. The biases in Soligo analysis suggest that if better data are available, his hypothesis have more chances to be supported by Pakistani data.

As noted earlier, income distribution in Pakistan has improved over time. Therefore, we feel that over time, consumption pattern of Pakistan should have become less capital intensive and more labour intensive. This should have been reflected in the production structure as well. We do not know much about the behaviours of factor intensities in the other sectors, but for the manufacturing sector capital intensities are shown in the table 23.

Table 23

Capital and Labour Intensities in Pakistan

Year	Capital/output	Output per labour	Capital/Labour
1959/60	3.15	3,282	10,349
1964/65	2.28	4,889	11,250
1969/70	1.90	5,743	10,900

Source: Kemal (17).

Table 23 shows that due to increase in productivity, both capital and labour intensity relative to output has gone down significantly over time. However, capital intensity measured by capital labour ratio does not show any significant change over time. How does it fit in with the decline in income distribution especially when rate of capital utilization in Pakistan has increased significantly over time? This conflict can be resolved if either there has been bodily shift in the consumption pattern towards more capital intensive goods or the production techniques have become more labour intensive over time. However, not much is known in either direction.

### IX. Conclusions

On the basis of various studies reviewed in this paper, the major conclusions regarding distribution of income in Pakistan are summarized in this section. However, in drawing the conclusions, we must bear in mind that the data employed in these studies seriously understate the incomes of the highest income group and as such inequalities in income are generally understated. Moreover, in urban areas the share of highest income group in GNP is expected to rise as there is a significant growth in the industrial and financial assets which are concentrated in few hands. Consequently, a decrease (increase) in income inequalities will be overstated (understated). Keeping these reservations in mind, we draw the following conclusions:

- 1) Income inequalities in Pakistan are similar to those observed in the other developing countries. Income distribution is more skewed in the urban areas than it is in the rural areas.
- 2) Inequalities in income distribution are significantly higher than those in the distribution of consumption expenditures. Similarly, inequalities in both income and consumption across households are significantly lower than the inequalities across earners or individuals.
- 3) Inequalities in both income and expenditures across households, earners and individuals seem to have declined over time. The decline is more pronounced and continuous in the rural areas. Income inequalities in the urban areas also show a decline but the decline is so insignificant that errors in data may very well explain that. Moreover, the decline is not continuous over the entire period. For example, in 1966-67 and again in 1971-72, income inequalities in urban areas have increased.
- 4) In the urban areas, while changes in the wage rates have been to reduce income inequalities, the changes in property income and in incomes of self-proprietors have tended to increase income inequalities. In the rural areas, on the other hand, self proprietor's incomes have tended to reduce inequalities while property and wage incomes tend to increase in income inequalities.
- 5) Though the conclusion that the income inequalities declined remains doubtful because of large sampling errors for the highest income group, we have supporting evidence from different sources to conclude that poverty has declined over time. The number of persons below a lower poverty line, i.e. Rs.225, declined quite rapidly.

- 6) Incidence of poverty in the informal sector is higher compared to the incidence of poverty in the formal sector. However, the percentage of very poor persons in the two sectors is almost the same.
- 7) Industrialization has led to increase in income inequalities because of rapid increase in the industrial and financial assets, skewed distribution of these assets and a significant increase in the rate of return to capital. Though, the wages also increased but the relative increase in wages was quite small. This on the one hand led to a decline in poverty but on the other hand this has led to an increase in the income inequalities. However, survey data do not show increase in the income inequalities but that has been due the fact that incomes of the big industrialists have been ignored completely in the survey. There is an urgent need to improve the quality of survey data and to supplement existing data with the data on the incomes from the industrial and financial assets.
- 8) Green Revolution has led to an improvement in the income distribution because small farmers have an access to tractors tubewells and fertilizers and they are more efficient.
- 9) The tax structure of Pakistan has been rather regressive which mean that welfare of the poor is even lower than suggested by post tax income distribution. However, encouraging to note is a decline in the regressivity which coupled with decline in post tax income distribution inequalities shows an improvement in the welfare. But mere regressivity or progressivity of taxes give us only a partial picture and at times can be misleading/the benefits of public expenditures across different groups of population are ignored.
- 10) Finally, the declining income inequalities should have resulted in higher demand for labour intensive goods because the consumption pattern of the poor is labour intensive. Therefore, we should expect a fall in capital-labour ratio but this has hardly been the case in Pakistan. However, this can be explained in terms of changes in the consumption pattern and/or the production techniques.



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