

Poverty, Inequality and Growth in Pakistan

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1. INTRODUCTION

The issue of the effects of growth on inequality and poverty is an intriguing one to pose in the context of a developing country. Pakistan's growth record has been impressive over a relatively long period. The economy has grown at around six percent per annum in real terms since the early 60s. This growth pattern has been achieved despite a number of adverse "shocks" during this period. There have been two wars, 1965 and 1971, the country was dismembered as a result of the second, and there have been a succession of violent political transitions. And in addition Pakistan has faced the adjustments enforced on many oil-importing developing countries as a result of the "oil shocks" of the 1970s. Further there has been a massive influx of refugees from the turmoil in Afghanistan, since the late 1970s. These are estimated to be around 3.5 million, or a quarter of the Afghan population. In this paper we examine the pattern of growth and public policy, in conjunction with some of the "exogenous shocks" described above, which have led to changes in the standards of living of different groups of the population.

The basis of Pakistan's sustained progress rests on the foundation of an innovative agricultural sector, supported by an extensive irrigation network. The latter dates in part to the last century, and is supplemented by substantial public investments since the 1950s. This pattern of public investment in infrastructure assisted in the rapid diffusion of high yielding varieties of cereals since the mid-60s, popularly known as the "Green Revolution". This process, it is held, spearheaded by the "middle-sized" farmers has led to substantial improvements in levels of income across a wide class of society [see e.g., Burki (1988)]. On the other hand it has been argued that the Green Revolution has both increased inequality, and led to immiserization of the poorest through increased landlessness. We examine some of the evidence in support these positions in this paper.

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A factor which has, to a large extent, offset the "negative shocks" we have described above, is the migration which has taken place, both within Pakistan,¹ and from Pakistan to the Middle East. While estimates concerning the number of workers abroad at a particular point in time are somewhat imprecise, the ILO (1984) estimates of numbers abroad, ranged upto 2.4 millions around 1982, and most of these workers were based in the Middle East. Despite an expected decline in the number of workers abroad following a slowdown of activity in the Middle East in recent years, formal remittances have nonetheless remained a major element in the country's balance of payments equation. In addition, there are "unofficial" remittances through the *hundi* system, which are largely unreported, but are likely to have been a major element in determining the standards of living of migrants' families.

The early discussion of poverty incidence in Pakistan² suggested orders of magnitude of the poor at around 40 percent, or more, of the population. These estimates have been criticised by Burki (1988) as being implausible in the Pakistan context. We find that much of the discussion is based on "arbitrary" poverty lines, in conjunction with data sets that are not comparable. We present the evidence with respect to poverty in Pakistan in Section 2.

While the identification of the poor in terms of their income levels serves a limited purpose in many developing countries current income is a fairly nebulous concept that is poorly correlated with living standards [see e.g., Dreze, Lanjouw and Stern (1989)]. Unfortunately this has formed the basis for much of the discussion of poverty in Pakistan [see e.g., Ercelawn (1986)] for one of the more thorough discussions, but one which unfortunately retains the problems associated with the measurement of income for rural households in Pakistan. It is often more meaningful to supplement estimates, preferably based on expenditures, with a description of additional correlates of living standards, such as real wages of unskilled agricultural labourers, and social indicators including, *inter alia*, life expectancy, child mortality and educational attainment. Some available estimates are reviewed in Ahmad and Allison (1990).

The question of income inequality has featured prominently in policy discussion in Pakistan since the mid-1960s. However, since the early work of Bergan (1967) and Azfar (1973), this has been the subject of considerable conjecture. Problems with sampling and non-response were recognized by both Bergan and Azfar, who took great care to scrutinize and adjust the data, which were based on surveys carried out in the mid-sixties. Much of the work on household data sets since then (and until recently) has been somewhat mechanical,³ based on unsatisfactory grouped, published data (1966–1972) rather than the underlying distributions.

¹For a discussion of the internal migration process [see Nabi (1986)].

²See e.g., Mujahid (1978) for a review and de Kruijk and van Leeuwen (1985).

³This has been changing in recent years, with the availability of household-level data. For example see Ahmad and Ludlow (1987) and Alderman (1988).

It is clear that there have been a number of factors which contributed to changing living standards in Pakistan, some to improve the relative position of the poorest, and others leading in the opposite direction [see e.g., de Kruijk and van Leeuwen (1985)], for a relatively recent discussion. In Section 3 we examine patterns of inequality and poverty in Pakistan for the years for which primary data are available to us: 1976-77, 1979 and 1984-85. The 1976-77 survey known as the *Micro-Nutrient Survey*, was conducted by the Planning Commission, and has a much smaller sample size than the 1979, and 1984-85 HIESs. The MNS was very carefully conducted, and the expenditure data appear to be reliable and consistent with patterns observed in the later HIESs [see Ahmad and Ludlow (1987)].

Given differential non-response, the "true" pattern of inequality in any given year may not be reflected by the sample. Thus on an *a priori* basis one would expect non-response at both tails of the size distribution. There have been efforts to correct for such errors by "grossing up procedures" which compare sample characteristics with known population parameters [see e.g., Atkinson and Micklewright (1983)] for work with the U.K. Family Expenditure Survey.⁴ Note that raising the observations by sampling fractions does not solve the problem not only because of differential non-response by various groups, but also the fact that the census frame used for the sample changes over time. This, however, raises a possibility that errors in the data may be responsible for some of the "observed" changes over time.

2. POVERTY AND ITS INCIDENCE

The discussion of poverty in Pakistan has been in terms of headcount measures, with the more sophisticated estimates providing headcounts for rural and urban areas justified often with an appeal to nutritional requirements. While it is not our intention to condone the use of the headcount measure, we present a range of "poverty-lines", to examine the sensitivity of the cut-off points, and to provide points of comparison over time (with suitable adjustments in the poverty-line). We also present estimates of the Sen index, which utilizes the Gini coefficient of the distribution below the poverty line as a representation of the intensity of poverty (see Tables 1 and 2 for rural and urban areas of Pakistan respectively).

We take four arbitrary "poverty-lines" to represent low, medium, medium-high, and high cut-off points. For rural areas for 1979, these are taken as expenditures of Rs 80, Rs 90, Rs 100 and Rs 110 per capita per month. Corresponding urban cut-off points are taken to be Rs 10 higher in each alternative case, but this

⁴Despite the extended experience of survey work in the UK Atkinson *et al.* have found that substantial biases remain, which, when corrected, can change the size distribution of incomes substantially.

Table 1
Rural Pakistan: Alternative Poverty Lines - Per Capita Expenditures

	1976-77			1979			1984-85					
	Medium			Medium			Medium					
	Low	Medium	High	Low	Medium	High	Low	Medium	High			
Rs/Capital/ Month	63.07	70.96	78.84	86.72	80.00	90.00	100.00	110.00	126.24	142.01	157.80	173.51
Proportion of Households	0.16	0.22	0.30	0.37	0.11	0.17	0.25	0.32	0.08	0.14	0.20	0.26
Proportion of Individuals	0.18	0.25	0.33	0.41	0.14	0.21	0.30	0.38	0.10	0.16	0.24	0.31
Sen Index	-	-	-	-	0.033	0.057	0.087	0.122	0.026	0.043	0.067	-

Source: Own calculations, based on household-level data from the MNS 1976-77, 1979 HIES and 1984-85 HIES.

Notes: The per capita 'poverty-lines' for 1979 are adjusted using the GDP deflator from World Bank, *World Tables* (4th edition), to derive equivalent "lines" for 1976-77 and 1984-85.

The Sen index is defined as $F(Y_p) [Y_p - Y^h] / Y_p$, where $F(Y_p)$ is the proportion of households below the poverty line Y_p and Y^h is the mean expenditure of individuals below the line, and G_p the Gini coefficient for such individuals.

Table 2
Urban Pakistan: Alternative Poverty Lines — Per Capita Expenditures per Month

	1976-77			1979			1984-85					
	Medium			Medium			Medium					
	Low	Medium	High	Low	Medium	High	Low	Medium	High			
Rs/Capital/ Month	70.96	78.84	86.72	94.61	90.00	100.00	110.00	120.00	142.02	157.80	173.57	189.35
Proportion of Households	0.18	0.22	0.28	0.34	0.10	0.14	0.20	0.25	0.07	0.11	0.16	0.20
Proportion of Individuals	0.22	0.27	0.32	0.38	0.12	0.17	0.23	0.29	0.08	0.14	0.20	0.25
Sen Index	—	—	—	—	0.031	0.048	0.070	0.094	0.021	0.035	0.053	—

should not be read as implying that the urban cost of living is Rs 10 per capita higher in urban areas. These estimates provide a range if lines for sensitivity purposes. These lines are then adjusted using the GDP deflator⁵ to provide comparative cut-off points for 1976-77 and 1984-85. The 1984-85 poverty lines span Rs 126–190 per capita per month. The Indian poverty line (using purchasing power parities) for 1985 would be equivalent to Rs 101 per capita per month, which would yield *lower* poverty estimates than the 8 percent minimum poverty incidence for 1984-85. Indonesia (with a higher per capita income) has a poverty line which translates to Rs 136 per capita. Our higher poverty line would therefore *overestimate* poverty by Indonesian standards, but only suggests poverty in the range of a quarter to a third of the population (as opposed estimates in the 40–50 percent range).

The comparison of the “Headcount” indices suggests a drop in poverty in 1984-85 over 1979, regardless of the sector, cut-off point, or whether household or individual size distributions are considered. The drop in poverty is even more marked if the 1976-77 MNS is brought into consideration (although it has a smaller sample size, and may not be strictly comparable). The Sen index also indicates a drop in poverty at each cut-off point over the 1976-77 – 1984-85 period.

As we are interested in the welfare of the poorest, and their living standards over time, it is instructive to examine the lower tails of the sectoral and provincial distributions of expenditures, and here we take the range of per capita expenditures of the lowest 5 percent of households. From Tables 6 and 7 it appears that the minimum per capita expenditures in rural areas *fell* in *nominal* terms in 1984-85 relative to 1979, in all provinces apart from Baluchistan. This is also reflected in a lower *mean* per capita expenditure for the bottom 5 percent of rural households relative to the sample mean in 1984-85 relative to 1979. There is thus an absolute and a relative decline in the conditions of the poorest in 1984-85 relative to 1979 that is not picked up in the simple headcount measures, which suggest a unilateral decline in poverty.

3. INEQUALITY IN PAKISTAN

A convenient representation of inequality is through the use of Lorenz curves, relating the cumulative proportion of households, $F(y)$ with per capita incomes less than or equal to y , to the cumulative proportion of income, $F(y)$, received by these households. Lorenz curves for Pakistan, rural and urban sectors, as well as for the four provinces for 1979 and 1984-85 are presented in the next sub-section. The 45-degree line represents complete equality, and the further the Lorenz curve

⁵ The CPI could have been used as an alternative, but the difficulty is that in Pakistan this is essentially equivalent to an urban index. In order to preserve comparability across sectors we have opted for the less than satisfactory solution involving a GDP deflator.

is from the 45-degree line, the greater the degree of inequality. As is well known, if one Lorenz curve lies entirely between another Lorenz curve and the 45-degree line, then the first distribution could be described as more equal than the latter, and for intersecting Lorenz curves unambiguous comparisons are not possible.

In describing changes in inequality, summary indices are often used. However, it is desirable to use more than one index, since different measures are more sensitive to changes in different parts of the size distribution than others. Following Champernowne (1974), we define a three-fold classification of types of inequality, representing the upper, middle and lower ranges of the size-distribution, and which would be relevant for a study of inequality in a country like Pakistan. These are: *alpha*-type: or inequality due to extreme wealth; *beta*-type: inequality among less extreme expenditures; and *gamma*-type: or inequality due to extreme poverty.

While the Gini coefficient has been commonly used to depict inequality changes in Pakistan, it is most sensitive to *beta*-type inequality, because it depends on the rank order weights of income recipients, and on the number of recipients within a given range. On the other hand, the coefficient of variation (CV) is more sensitive to *alpha*-type inequality, since it attaches equal weights to transfers at all levels of income, whereas the others attach relatively less weight to transfers among the rich as compared to the poor. The logarithmic variance is relatively sensitive to *gamma*-type inequality. We also use the Atkinson measure of inequality, which is based on rankings implied by a social welfare function. Specification of the inequality aversion parameter, e , for Atkinson's index, attaches different weights to parts of the size-distribution. Low values of e (0 or 0.5, say) reflect greater sensitivity to *alpha*-type inequality, whereas $e = 1$ signifies sensitivity to *beta*-type inequality (a marginal unit to household h is worth half as much as a marginal unit to household i if the per capita income of h is twice that of i) and $e = 2$, sensitivity to *gamma*-type inequality. Values of e in excess of 2, say 5, reflect Rawlsian maximin preferences in that only the welfare of the very poorest is considered. Note that a marginal unit to i would be worth 32 times a unit to h for $e = 2$ in the example above. In Pakistan for 1984-85, the gap between the per capita incomes of the bottom 5 percent and top 5 percent was a factor of 15, and a specification of $e = 5$ would imply that the bottom 5 percent would be given a weight around 50,000 that of the top 5 percent. For a further discussion of inequality indices [see e.g., Cowell (1977)]. It is interesting to note that Dalton (before he became the Chancellor of the Exchequer) felt that the correct value of e , for most governments, was greater than 1 and possibly around 2 [see Dalton (1939), pp. 97-99].

We use the following inequality indices: (i) Coefficient of Variation; (ii) Logarithmic variance; (iii) the Gini Coefficient; and (iv) Atkinson Measures with the following values of e : 0.5, 1.0, 2.0 and 5.0.⁶ Standard poverty measures in addition

⁶These measures were calculated using Frank Cowell's INEQ programmes.

to the inequality indexes, have been presented. Inequality indices for Pakistan, the overall urban and rural sectors, for distributions of income and expenditure are presented in Tables (3) – (5) for 1979 and 1984-85. Provincial breakdowns, for rural and urban sectors are presented in Tables 6 – 7.

As with the simple examination of distributions and the Lorenz curves, (Fig. 1a – 1c) inequality measures such as the Gini Coefficient suggest little change in 1984-85 over 1979: the Gini coefficient for households ranked by per capita expenditure being 0.363 in 1979 as against 0.371 in 1984-85. The equivalent Ginis for the distribution of individuals ranked by per capita expenditure are 0.345 in 1979 as against 0.350 in 1984-85.⁷ This is confirmed by an inspection of the Lorenz curves for Pakistan.

A closer examination of sectoral and regional patterns suggests that inequality in Pakistan displays rather complex patterns which highlight the relative movements of groups of the population. There is an increasing CV (reflecting the presence of very high incomes) in rural areas (particularly in the NWFP, Baluchistan and Sindh provinces, but not in the Punjab).

There is an interesting pattern of inequality as suggested by the Atkinson indices for $e = 2$, (or that caused by the presence of large numbers of the poor relative to the mean), and $e = 5$ (reflecting households in the lower tail of the distribution). As the comparison of Tables 6 and 7 suggests, there is a worrying increase in these two values of the Atkinson index in rural areas of all Provinces (apart from $e = 5$ for Baluchistan, which has experienced a concerted action of public investments and transfers). Given the lower *nominal* expenditure levels in 1984-85, this suggests a worsening of the position of the poorest relative to the mean as well as increasing intensity of poverty. To some extent this may have been due to the adverse weather conditions and the drought in 1984.

A comparison of inequality changes in rural districts in the Punjab over the period 1979 to 1984-85 is presented in Table 8. There are significant differences amongst districts, and increasing concentration is evident in the northern rain-fed regions, and apart from Multan and D. G. Khan, in the arid south. This tends to support the contention that the weather played a relatively greater role in determining changes in inequality in the rain-fed regions, than in the irrigated heartland of the Punjab, affecting the overall pattern of inequality change in the province.

We turn now to the patterns in urban areas. There is an overall decline in the Atkinson ($e = 2, 5$) indices for the distribution of expenditures⁸ in urban areas of Pakistan as a whole. This is matched in the provincial pattern in the Punjab, with

⁷ Own estimates, available on request.

⁸ The same indices based on the distribution of incomes, all suggest increases for urban areas as well.

Table 3
Pakistan - Overall Inequality Indices

	Pakistan 1979		Pakistan 1984	
	Income	Expenditure	Income	Expenditure
Rs per Capita	201.8	196.3	356.8	346.8
No. of Hhs.	19619	19638	16576	16576
Coeff Var.	1.3077	1.3007	1.7683	1.3592
Log Var.	0.4096	0.4055	0.4516	0.4295
Gini Coeff.	0.3685	0.3634	0.3831	0.3709
Atkinson's Index				
e = 0.5	0.1234	0.1207	0.1346	0.1236
1.0	0.2060	0.2021	0.2219	0.2083
2.0	0.3225	0.3326	0.3526	0.3441
5.0	0.6321	0.9109	0.7977	0.8968

Source: Own estimates.

Notes: The 1979 figures are based on observations for household observations ranked by per capita incomes or per capita expenditures, from the 1979 HIES; and the 1984 figures from HIES 1984-85. In addition to the mean per capita income and expenditure for each year, inequality measures are presented for the Coefficient of Variation, the Log. Variance, Gini Coefficient, and the Atkinson Index for values of an inequality aversion parameter (e), ranging from 0.5 to 5.

Table 4
Inequality Indices for Expenditures — 1979

	Pakistan		Provinces			
	Urban	Rural	Punjab	Sindh	NWFP	Baluchistan
Per Cap	242.78	167.18	192.16	218.10	190.31	170.69
No. Hhs.	7564	12073	11901	4142	2596	998
C. V.	1.3008	1.1169	1.2760	1.3809	0.8991	0.8240
Log Var.	0.5114	0.2987	0.4088	0.4583	0.3093	0.2981
Gini	0.4038	0.3118	0.3623	0.3961	0.3240	0.3047
Atkinson's Index						
e = 0.5	0.1432	0.0893	0.1186	0.1432	0.0930	0.0814
1.0	0.2401	0.1534	0.2004	0.2335	0.1604	0.1453
2.0	0.3866	0.2558	0.3336	0.3473	0.2550	0.2534
5.0	0.9275	0.6583	0.9098	0.5704	0.4214	0.6914

Table 5
Inequality Indices for Expenditures - 1984

	Pakistan				Provinces			
	Urban	Rural	Punjab	Sindh	NWFP	Baluchistan		
Per Cap	412.1	293.5	325.7	383.8	372.0	332.0		
No. Hhs.	7458	9118	9266	4022	2396	892		
C. V.	1.1153	1.3465	1.1181	1.2164	1.4522	1.1376		
Log Var.	0.4942	0.3356	0.4186	0.4235	0.4461	0.4245		
Gini	0.3919	0.3282	0.3618	0.3724	0.3850	0.3803		
Atkinson's Index								
e = 0.5	0.1305	0.1013	0.1154	0.1216	0.1349	0.1274		
1.0	0.2255	0.1709	0.1988	0.2064	0.2225	0.2134		
2.0	0.3675	0.2919	0.3364	0.3308	0.3459	0.3241		
5.0	0.8388	0.8799	0.8931	0.8164	0.7728	0.4853		

See Notes to Table 3.

Table 6
Provincial Inequality Measures for Expenditure - 1979

	Punjab		Sindh		NWFP		Baluchistan	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Rs/Cap	234.3	171.2	269.1	150.5	225.1	174.2	209.7	140.9
No. Hhs	3952	7949	2361	1782	820	1776	432	566
Minimum Expenditure Rs/Cap	1.6	31.0	22.3	41.6	56.7	41.5	52.0	8.6
C. V.	1.285	1.139	1.301	1.016	0.990	0.714	0.858	0.530
Log Var.	0.522	0.319	0.530	0.230	0.424	0.248	0.309	0.226
Gini	0.403	0.325	0.420	0.278	0.376	0.287	0.319	0.256
Atkinson's Index								
e = 0.5	0.141	0.095	0.154	0.073	0.120	0.071	0.089	0.054
1.0	0.240	0.163	0.254	0.125	0.207	0.127	0.156	0.104
2.0	0.393	0.264	0.379	0.205	0.320	0.212	0.254	0.200
5.0	0.927	0.463	0.617	0.367	0.484	0.376	0.431	0.650

Table 7

Provincial Inequality Measures for Expenditure - 1984

	Punjab		Sindh		NWFP		Baluchistan	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Rs/Cap	377.0	290.2	457.9	288.0	449.9	316.7	391.4	282.9
No. Hhs	3792	5474	2268	1754	994	1402	404	488
Minimum Expenditures								
Rs/Cap	21.7	3.6	8.25	13.33	74.2	11.3	81.1	79.8
C. V.	1.102	0.952	1.000	1.280	1.020	1.473	1.288	0.706
Log Var.	0.462	0.360	0.471	0.260	0.533	0.342	0.545	0.309
Gini	0.382	0.334	0.381	0.298	0.409	0.340	0.429	0.316
Atkinson's Index								
e = 0.5	0.125	0.098	0.121	0.088	0.138	0.113	0.161	0.082
1.0	0.215	0.173	0.213	0.145	0.240	0.184	0.264	0.149
2.0	0.346	0.301	0.353	0.234	0.374	0.290	0.384	0.249
5.0	0.681	0.879	0.845	0.663	0.564	0.735	0.540	0.420

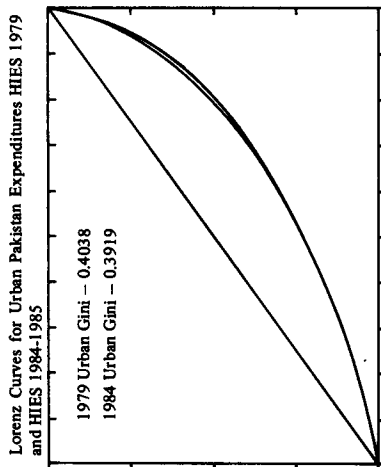
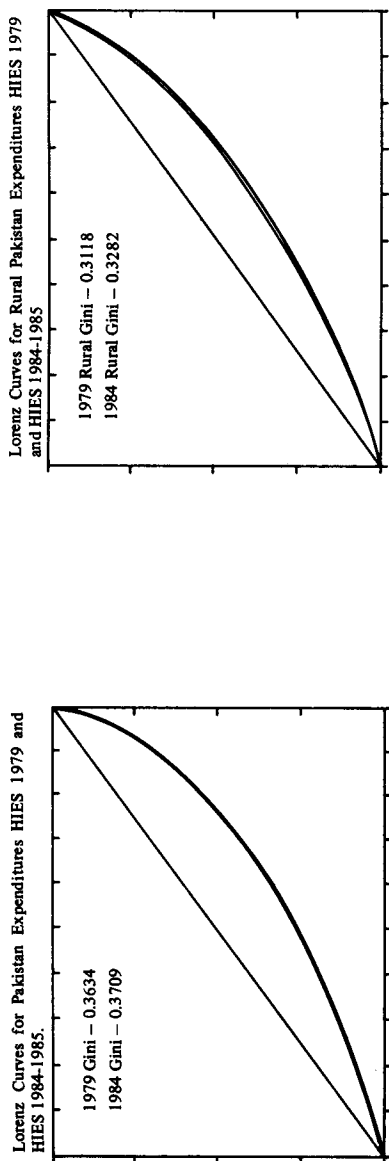


Fig. I(a) - I(c). Lorenz Curves for the Expenditure Distribution, 1979 and 1984-1985, Pakistan, Urban and Rural Areas.

Note: All the Lorenz curves relate to the cumulative distribution of households along the X-axis (ranked by per capita income or expenditure), with respect to the cumulative share of income (expenditure) on the Y-axis.

the two Atkinson indices (reflecting the relatively poor) having declined significantly. However, in the Sindh, while there is a decrease in the index for $e = 2$, there is a sharp increase in the index for $e = 5$, suggesting a deterioration in the living conditions of the poorest.⁹ One may conjecture that this is not unconnected with the growing urban unrest experienced in this province in recent years. Further, in the NWFP and Baluchistan, both values (2 and 5) of the Atkinson index show some deterioration. Thus, while there has been an increase in the nominal incomes of the poorest, in real terms both have decreased in the two provinces.¹⁰ This fact may be associated with the influx of refugees from Afghanistan which has been borne principally by these two provinces.

The discussion above suggests that aggregate comparisons of inequality at the all-Pakistan level may mask important changes that might have occurred at the sectoral or regional levels. The patterns suggest an increasing relative intensity of extreme poverty in most rural areas, as well as urban NWFP and Baluchistan, and a deteriorating position of the poorest in urban Sindh. Countervailing this, rising incomes in urban Sindh, and urban Punjab, have been accompanied by a reduction in concentration of the *alpha*-, *beta*-, and to some extent the *gamma*-types of inequality. This rather complex picture of the relative contribution of poverty to inequality is to be juxtaposed against the more simple (though less satisfactory) exercise of counting the "numbers of poor".

4. CONCLUDING REMARKS

The sustained pattern of growth in Pakistan since the 1960s clearly has had an impact on living standards, and the picture both with respect to poverty and inequality is a complex, albeit generally favourable one. There is evidence that substantial improvements have been made by households in the middle ranges of the size distribution, lending credence to the hypothesis that the middle farmers have been in the vanguard of technological change made possible by the Green Revolution. Note that public policy was central in determining the success of the new technologies, with huge investments in infrastructure, and subsidised inputs. The migrations, both internal and external, have had an important imprint on the pattern of income distribution and inequality in Pakistan.

The pattern of poverty in Pakistan is fairly diverse, and distribution-sensitive are more appropriate than other indices or a single poverty line. The correlates of poverty are as important as the incidence analysis presented here for an illustration [see Ahmad and Allison (1990)]. Education, and skill levels are evidently extremely

⁹This is again borne out by the relatively lower nominal expenditure per capita of the poorest households in 1984-85 over 1979.

¹⁰See Tables 6 and 7 and apply a price deflator of 1.57 to the poorest household's incomes.

important in reducing the probability of poverty. Government expenditures on education and the social sectors have not been a feature of Pakistan's growth performance, and much more could be done in this area to augment future growth potential and to reduce the likely incidence of poverty. Life-cycle events and high dependency ratios are important correlates of poverty. Recent measures to institute *zakat* and *ushr*, earmarked taxes (more or less lump-sum in nature), to provide security to the indigent and the vulnerable, will have an impact on a portion of those households afflicted by such events. Fresh thinking in the area of social security (broadly defined), given increasing urbanization and changing demographic structures, will be essential to prevent substantial increases in poverty in the future.

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Comments on "Poverty, Inequality and Growth in Pakistan"

The authors have written a very interesting and comprehensive paper presenting a picture of the effects of growth on poverty and income distribution in Pakistan during the 1976–1985 period. The data used have been largely drawn from the Household Income and Expenditure Surveys for 1979 and 1984–85. The analysis of poverty and income inequality has been decomposed at a fairly disaggregated level, i.e. an urban/rural breakdown at the provincial level. Thus, what the authors have done is basely to give the national and provincial pictures and further disaggregated them for rural/urban levels by province. The major techniques used to measure income and expenditure inequalities are Gini coefficient and Atkinson index. The results of their analysis are briefly as follows.

For Pakistan as a whole, the authors find that the Gini coefficients for both income and expenditures have deteriorated over time. For Atkinson's index, the result is the same – an increase in income and expenditure inequalities. If one then looks at the urban/rural breakdown at the national level, a similar picture can be seen: both the Gini coefficient and Atkinson index show a deteriorating situation with regard to income and expenditure inequalities. The exercise is repeated at the provincial level. The most interesting feature of the paper is that the authors have decomposed the provincial data for urban and rural areas. The results are significant in that they give a better insight into what is happening to incomes and expenditures.

If we look at the Gini coefficient for the two periods (Tables 6 and 7 we find that it has only improved for urban Punjab and urban Sindh – going down for urban Punjab from 0.400 to .397 and for urban Sindh from 0.425 to .388 – a great improvement. If one then looks at Atkinson's index rural Punjab ($e = .5$) has improved. However, for other values ($e = 2.5$), it has deteriorated. Urban Sindh for all values of e also shows improvement. Urban Punjab, rural Sindh, urban NWFP, rural NWFP. Urban Balochistan, rural Balochistan have all worsened. So one can reasonably say, that overall income inequalities have worsened in the country.

With regard to the measures of expenditure inequalities, the Gini coefficient shows that urban Punjab and urban Sindh have improved, whereas rural Punjab, rural Sindh, and urban NWFP and Balochistan (rural and urban) have deteriorated. Atkinson's index, for all values of e , show that the situation has deteriorated for rural Punjab, rural Sindh, urban and rural NWFP, urban and rural Balochistan except

in the case of ($e = 5$) according to which rural, Balochistan has improved. The situation of urban Punjab is a bit mixed, showing improvement when $e = 0.5$ and 1, and deterioration when $e = 2$ and then improving again when $e = 5$. Similarly, in urban Sindh an improvement is seen when $e = .5, 1$ and 2. There is deterioration when $e = 5$.

What this analysis shows is that both income inequalities and expenditure inequalities have worsened over time particularly in the population at the lower end of the income scale. Growth has failed to redistribute income equitably. Therefore, it is necessary that appropriate policies be devised and implemented to bring about an equitable distribution of both income and expenditure. Otherwise, it may lead to social upheaval.

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