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The Distribution of Purchasing Power in Pakistan, 1985-86

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1. INTRODUCTION

Suppose that you and I earn the average income of Pakistan and that we are looking at a parade in which the whole population of Pakistan takes part. It is a spectacular parade because the size of all marchers is proportionate to their income. We have the average height. Anyone who earns more than the average is taller than we are; anyone who earns less than the average is smaller. The procession is organized in such a way that the smallest walks in front and the tallest in the rear. The parade moves at uniform speed and its duration is one hour exactly. What do we see? What is the size of the marchers in front and in the rear? Who passes by during the first ten minutes, the second ten minutes, etc.? Where do they live, in which province, in urban or in rural areas? How long does it take before we see people of our own length? Who are they? Section 4 presents the Pakistani Parade and tries to answer these questions.[1]

But before being able to form the queue by putting everybody in its correct position, we need to discuss the way of estimating the size of each person, and therefore, the choice of the concepts of income and income units (Section 3), the data base, the choice between using grouped data versus tape data, and the related type of computer required (PC versus mainframe) for these calculations (Section 2).

Actually, the contribution of this paper is twofold. First, the presentation of the Pakistani Parade, and secondly, after having made adjustments for economies of scale of households earlier by using equivalence scales [Kruijk (1987)], this paper standardizes these adjusted household incomes further by correcting for differences in average price levels between provinces and between urban and rural areas as announced but not executed in Kruijk (1986). After these adjustments, the term 'distribution of income' is no longer a proper description of what finally is ranked. Accordingly, the title of the present paper is now called 'The distribution of purchasing power in Pakistan, 1985-86'.

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[1]The idea of organizing such a parade has been put forward by the dutch economist Prof. Jan Pen (1971).

2. THE DATA BASE

Although not ideal, the Household Income and Expenditure Survey (HIES) is the best data source on household incomes in the country. It presents data on household composition, sources and levels of household income, structures and levels of household expenditures. Most likely, the Pakistani HIES is – like all other HIESs in the world – incomplete and bad at the top. The rich are not easily accessible to investigators and their extent of under-representation is not known. In a situation where data are consistently incomplete, there is no other option than being pragmatic. Unfortunately, it is not always possible to check and supplement HIES data by data from other sources like income tax data from the Central Board of Revenue (as the late Javaid Azfar had done in the 1970s).

Further, to raise the sample size to 'actual' population figures, population trends are extrapolated by applying annual compound growth rates (of the in-between Census period of September 1972 – March 1981) at the most disaggregated level available in published form, i.e. population figures of urban and rural areas by province (eight regions).

This paper makes use of published data in the form of grouped data and not of unpublished individual income data from computer tapes. Undoubtedly, inequality calculated on the basis of grouped data is an under-estimation of true inequality because inequality within brackets is neglected. However, as reported earlier on the basis of data of other countries, the extent of under-estimation is insignificant in cases where the number of income groups is more than ten [Kruijk (1986)]. In the Pakistan case with twelve income groups, the level of Theil coefficients calculated on the basis of published grouped data appears to be consistently (overall Pakistan, urban and rural separate) about 0.002 points lower than on the basis of tape data for the year 1984-85 at a level of about 0.270, which is an under-estimation of about one percent only [Government of Pakistan (1989)]. This implies that published data can be used, and – more important – that a (super)mini or mainframe computer which can handle large data tapes is not required. A personal computer is adequate enough, which makes this kind of analysis accessible to a much wider group of researchers. In fact, all calculations presented in this paper are constructed in an ordinary spreadsheet.

3. CONCEPTS OF INCOME AND INCOME UNITS

Choice of the Income Unit

The intention of forming a parade is to get a picture of the distribution of welfare in the country. If the size of each marcher would be based on his or her individual income like in Pen's parade for the Netherlands and for England, [see Pen (1971) and *The Economist* (1987)] it happens that some wives and children, who

supplement the family income, are reduced to pygmies and have to walk in the front of the parade, whereas the husband/father, who is the main income earner of the family, might be taller than average. This situation is not acceptable in our parade. It is more satisfying to organize the parade in such a way that everybody joins in the parade and that members of the same household have equal size and walk hand in hand alongside. In that case, it seems more appropriate to consider household incomes instead of individual incomes as the basis for everybody's size, but unfortunately it is not as easy as that. Measuring welfare on the basis of income per household ignores the reality that households differ in size and composition. A one-person household earning Rs 1000 per month is much better off, of course, than a six-person household with Rs 1000 per month. An often used remedy to adjust for household size is simply to deflate household income by household size, so that income is expressed in per capita terms. However, such an approach is equally unacceptable because in that case it is believed that a single person with Rs 1000 is as well off as a two-person household with Rs 2000, and a six-person household with Rs 6000, which obviously is not so.

Economies of scale in household consumption cannot be denied. However, it is not easy to suggest a proper equivalence scale. Since the one I proposed earlier has been rejected by Kemal (1987), the old proposal is replaced, herewith, by a new suggestion for an equivalence scale which has been applied in this paper and which has the advantage of being very simple: the head of the household is one (as always), but now any additional person counts for 0.5. This scale implies that a one-person household with Rs 1000 has the same level of welfare as a two-person household with Rs 1500, a three-person household with Rs 2000, etc. The result of using this scale to adjust for economies of scale in the household is presented in Table 2.

Choice of the Income Concept

Although standardizing household incomes by taking the size of the household into account is an improvement, it is still not sufficient for estimating the size of each person. Generally speaking, the cost of living in rural areas is lower than in the urban areas. In other words, one rupee has more purchasing power in rural areas than in urban areas. Welfare estimates should take these price differences into account. The HIES presents detailed data on family expenditures (in rupees) and on shopping-baskets (in units) disaggregated into provinces and urban and rural areas (eight regions). On the basis of these figures, it is not difficult to calculate prices of the various items per region. Table 1 present these prices as well as a (weighted) average family shopping-basket which is constructed on the basis of regional shopping-baskets. With this information it is feasible to estimate regional price indexes with the qualification that these are based on food items only.

After having estimated these regional price indexes all (household size

Table 1

Estimation of a Regional Price Index on the Basis of Food Prices, 1985-86

Shopping-basket			Price per Region (in Rupees per Unit)							
			Punjab Rural	Punjab Urban	Sindh Rural	Sindh Urban	NWFP Rural	NWFP Urban	Balu-chistan Rural	Balu-chistan Urban
Wheat and Wheat Flower	(KG)	10.96	2.1	2.3	2.3	2.6	2.4	2.6	2.5	2.3
Rice and Rice Flower	(KG)	1.28	5.1	5.8	3.0	4.4	4.9	6.1	4.0	6.4
Gram-whole	(KG)	0.04	8.5	8.6	8.0	8.5	7.0	9.0	6.0	12.0
Gram-split	(KG)	0.20	8.0	7.3	8.5	6.0	8.3	7.9	9.0	9.7
Mash	(KG)	0.09	11.6	10.8	10.5	10.7	10.2	6.6	10.9	11.9
Moong	(KG)	0.10	10.4	10.2	9.9	9.9	10.0	4.8	11.6	10.9
Masoor	(KG)	0.06	15.8	15.4	14.8	13.6	5.5	12.5	14.7	15.0
All Other Pulses	(KG)	0.03	7.0	11.0	7.1	6.8	8.4	9.3	8.7	9.0
Milk (Fresh & Boiled)	(LT)	6.67	3.3	4.3	3.4	5.1	4.8	4.9	4.5	4.9
Milk Packed (Tetra, etc.)	(LT)	0.03	5.0	5.4	4.0	9.0	5.8	4.8	4.0	9.3
Milk (Dry & Condensed)	(KG)	0.03	6.0	8.0	4.8	28.7	17.0	11.0	14.2	44.0
Butter	(KG)	0.06	36.0	31.5	30.4	37.0	64.0	50.0	50.0	50.0
Ghee (Desi)	(KG)	0.10	36.8	42.6	30.5	27.0	48.5	56.0	37.3	43.7
Yogurt	(KG)	0.18	3.8	5.0	5.2	7.1	6.4	5.7	5.7	5.0
Vegetable Ghee	(KG)	0.58	14.0	13.9	14.0	13.9	14.3	13.8	14.9	15.5
Mustard Oil	(KG)	0.03	10.0	8.0	15.5	14.0	17.0	12.5	15.1	18.3
Mutton	(KG)	0.12	25.3	28.5	29.3	29.0	12.0	16.0	28.1	28.3
Beaf	(KG)	0.42	12.0	13.2	14.1	15.7	12.0	11.9	13.5	13.9

Continued–

Table 1 – *(Continued)*

Fish Fresh	(KG)	0.06	12.0	18.0	17.1	14.6	14.0	16.0	15.2	14.9
Chickens	(KG)	0.06	22.8	16.3	22.0	17.9	25.8	25.3	22.8	22.8
Eggs	(NO)	1.54	1.0	0.9	0.9	0.8	0.9	1.0	0.9	1.0
Banana	(NO)	2.94	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4
Moosmi, Malta, Keeno	(NO)	2.40	0.4	0.4	0.4	0.5	0.4	0.4	0.6	0.5
Mango	(KG)	0.04	9.0	6.8	7.0	7.0	3.0	7.0	8.8	2.4
Apple	(KG)	0.05	9.7	12.4	9.7	9.3	11.3	11.7	7.4	9.4
Mellon	(KG)	0.06	3.5	3.4	2.6	3.0	2.0	3.0	3.4	4.1
Other Fruit = +Grapes	(KG)	0.12	6.7	6.9	5.5	6.7	8.2	7.3	17.7	16.5
Potatoes	(KG)	0.78	2.4	2.2	2.8	2.5	2.7	2.4	3.2	3.0
Tomatoes	(KG)	0.27	4.8	3.9	3.0	3.4	4.1	3.6	4.4	4.3
Onion	(KG)	0.70	2.4	2.2	2.1	2.1	2.9	2.5	2.6	2.5
All other Vegetables	(KG)	1.62	3.0	3.3	3.5	3.8	3.2	3.9	3.4	4.5
Salt	(KG)	0.24	1.4	1.4	1.1	1.3	1.2	1.2	1.3	1.3
Chillies	(KG)	0.07	15.9	16.0	16.1	16.4	15.7	16.3	10.4	17.9
Refined Sugar	(KG)	0.79	9.1	9.0	8.7	8.7	9.4	9.2	9.3	9.1
Sugar (Desi)	(KG)	0.04	6.2	9.0	7.5	7.0	7.9	6.5	5.8	5.5
Gur and Shakar	(KG)	0.39	4.6	4.7	5.0	4.0	5.6	5.2	5.5	5.0
Tea (Black / Green)	(KG)	0.06	64.3	75.8	63.0	68.5	59.1	75.7	66.4	75.0
Bill per Region (Rupees)			112.2	124.2	112.4	130.1	128.9	132.7	129.1	137.5
Price Index		100.0	93.7	103.7	93.8	108.6	107.6	110.8	107.8	114.8

adjusted) family incomes are first divided by their index before determining the size of all marchers. The effect of this price adjustment for the level of average income in each region is indicated in Table 2. It is clear that the sequence of e.g. all residents of urban areas in Punjab in the parade changes with respect to residents of other areas, but not with respect to each other, because all (adjusted) household incomes of urban Punjab are divided by the same amount i.e. 1.037. Both adjustments (for household size and for regional prices differences) can be summarized in the following formula:

$$Ystan_{i,r} = Y_i * \frac{1 + 0.5\,(\bar{S} - 1)}{1 + 0.5\,(S_i - 1)} * \frac{100}{P_r}$$

in which:

$Ystan_{i,r}$ = Standardized income of household i in region r;
Y_i = Income of household i;
$\bar{S}$ = Average household size ($\bar{S}$ = 6.34 in 1985-86);
S_i = Size of household i; and
P_r = Price index of region r.

Table 2 shows that the standardization mentioned above have a substantial impact on the ranking of average monthly household incomes of the eight regions. According to unstandardized HIES data, Punjab ranks last in urban areas and third in rural areas, which is not in line with the popular perception of its being the most prosperous province [see also Naseem (1986)]. After standardization the picture becomes much more in line with commonsense. Now Punjab ranks second in urban areas after Sind which is dominated by cosmopolitan Karachi; in rural areas Punjab has now the highest average income, while Baluchistan and NWFP are the poorest and not the richest provinces in rural areas as suggested by unadjusted figures.

4. THE PAKISTANI PARADE

After having discussed the way in which everybody's size has been determined, it is high time to watch the parade. Graph 1 facilitates to visualize the cortege a bit, each bar illustrates one minute of the parade. Table 3 shows the Pakistani Parade in figures. Each major group of Tables 3 and 4 represents ten minutes. Table 4 gives an indication of the over-representation of the eight regions (the shaded segments) in the six groups of ten minutes. In this paper only one attribute has been selected, viz. the eight regions of the country. Of course, it is possible –

Table 2

Average Income per Household per Region, Adjusted for Differences in Household Size and Average Price Level per Region

Region	Income per Household Published in HIES (Rs)	Income per Household Calculated from HIES (Rs)	Average Household Size	Household Income per Standard Household (Rs)	Regional Price Index	Purchasing Power per Standard Household (Rs)
1. Sindh-urban	2884	2828	7.10	2563	108.60	2360
2. Punjab-urban	2333	2295	6.56	2228	103.70	2149
3. Baluchistan-urban	2519	2428	6.47	2386	114.80	2078
4. NWFP-urban	2334	2445	6.83	2292	110.80	2069
5. Punjab-rural	1618	1622	6.07	1684	93.70	1797
6. Sindh-rural	1599	1645	6.31	1652	93.80	1761
7. Baluchistan-rural	1621	1638	5.59	1824	107.80	1692
8. NWFP-rural	1777	1789	6.65	1717	107.60	1595

Table 3

The Pakistani Parade in Figures (each Major Group is Ten Minutes)

Region	Income Class	No. of Households (Millions)	Household Size	Population (Millions)	Cumulative Population (Millions)	Income per Household (Rs)	Purchasing Power per Standard Household	Standardized Income Size in Feet
Group 1								
Balochistan-urban	600–700	0.00	4.30	0.00	0.00	666	804	2.32
NWFP-urban	<600	0.01	2.81	0.02	0.02	486	846	2.44
Punjab-rural	<600	0.50	3.06	1.52	1.55	470	907	2.62
Balochistan-rural	600–700	0.05	3.94	0.20	1.75	660	910	2.63
Punjab-urban	<600	0.08	2.84	0.22	1.97	496	915	2.64
Balochistan-urban	700–800	0.00	4.38	0.01	1.98	773	919	2.65
NWFP-urban	600–700	0.01	3.68	0.03	2.02	659	934	2.69
NWFP-rural	700–800	0.08	4.40	0.34	2.35	750	947	2.73
NWFP-rural	<600	0.08	2.42	0.20	2.56	476	949	2.74
NWFP-rural	600–700	0.06	3.70	0.24	2.80	655	951	2.74
Punjab-urban	600–700	0.06	3.89	0.24	3.04	667	965	2.78
NWFP-urban	700–800	0.01	4.04	0.03	3.06	758	996	2.87
Balochistan-rural	<600	0.04	2.45	0.10	3.16	509	1006	2.90
Punjab-rural	600–700	0.31	4.04	1.27	4.43	656	1019	2.94
NWFP-rural	800–1000	0.23	5.07	1.16	5.59	910	1022	2.95
NWFP-urban	800–1000	0.02	4.83	0.10	5.69	909	1033	2.98
Balochistan-urban	<600	0.00	1.92	0.00	5.69	475	1040	3.00

Continued–

Table 3 – (*Continued*)

Punjab-urban	700–800	0.07	4.17	0.30	6.00	767	1050	3.03
Balochistan-rural	700–800	0.06	3.89	0.23	6.23	757	1055	3.04
Sindh-rural	<600	0.07	2.64	0.20	6.42	505	1086	3.13
Sindh-rural	600–700	0.06	3.71	0.23	6.65	656	1089	3.14
Punjab-rural	700–800	0.36	4.39	1.56	8.22	755	1097	3.17
Balochistan-rural	800–1000	0.14	4.52	0.65	8.87	898	1109	3.20
Sindh-rural	700–800	0.07	4.32	0.31	9.18	754	1109	3.20
Sindh-urban	<600	0.01	2.04	0.02	9.20	503	1118	3.22
Sindh-urban	700–800	0.02	3.56	0.07	9.27	773	1145	3.30
Punjab-urban	800–1000	0.21	4.62	0.99	10.25	918	1157	3.34
Punjab-rural	800–1000	0.85	5.00	4.25	14.51	905	1182	3.41
Sindh-urban	800–1000	0.07	4.30	0.29	14.80	938	1196	3.45
Sindh-rural	800–1000	0.26	4.93	1.29	16.09	914	1206	3.48
NWFP-urban	1000–1500	0.06	5.96	0.38	16.47	1268	1207	3.48
Average							1090	3.15
Group 2								
NWFP-rural	1000–1500	0.59	5.96	3.49	19.96	1242	1217	3.51
Balochistan-rural	1000–1500	0.30	5.56	1.66	21.62	1228	1275	3.68
Punjab-urban	1000–1500	0.60	5.88	3.54	25.16	1264	1300	3.75
Balochistan-urban	800–1000	0.01	3.60	0.04	25.20	936	1301	3.75
Balochistan-urban	1000–1500	0.03	4.96	0.16	25.36	1239	1329	3.83
NWFP-rural	1500–2000	0.38	7.46	2.81	28.16	1727	1393	4.02
Punjab-rural	1000–1500	0.75	5.92	4.45	32.62	1242	1407	4.06
Average							1325	3.82

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Table 3 – (*Continued*)

Region	Income Class	No. of Households (Millions)	Household Size	Population (Millions)	Cumulative Population (Millions)	Income per Household (Rs)	Purchasing Power per Standard Household	Standardized Income Size in Feet
Group 3								
Punjab-rural	1000–1500	1.00	5.92	5.92	38.54	1242	1407	4.06
Sindh-rural	1000–1500	0.63	5.80	3.68	42.21	1227	1412	4.07
NWFP-urban	1500–2000	0.06	7.20	0.46	42.68	1759	1421	4.10
Sindh-urban	1000–1500	0.26	5.03	1.29	43.97	1301	1459	4.21
Balochistan-urban	1500–2000	0.03	6.23	0.18	44.15	1757	1554	4.48
Balochistan-rural	1500–2000	0.13	6.29	0.85	45.00	1690	1579	4.56
Sindh-urban	1500–2000	0.30	6.58	1.95	46.95	1787	1594	4.60
Punjab-urban	1500–2000	0.45	6.58	2.95	49.89	1734	1619	4.67
Average							1480	4.27
Group 4								
Sindh-rural	1500–2000	0.42	7.27	3.06	52.96	1730	1637	4.72
NWFP-rural	2000–2500	0.21	8.13	1.73	54.68	2217	1657	4.78
Sindh-urban	600–700	0.01	1.76	0.01	54.69	678	1661	4.79
NWFP-urban	2000–2500	0.03	7.67	0.26	54.95	2227	1702	4.91
Punjab-rural	1500–2000	1.11	6.92	7.69	62.65	1729	1711	4.94
NWFP-urban	2500–3000	0.02	9.13	0.19	62.83	2763	1808	5.22

Continued –

Table 3 – (*Continued*)

Balochistan-rural	4000–4500	0.01	14.46	0.10	62.93	4145	1826	5.27
Sindh-urban	2000–2500	0.21	7.33	1.51	64.43	2280	1850	5.34
Balochistan-rural	2500–3000	0.03	8.85	0.22	64.66	2703	1869	5.39
NWFP-rural	2500–3000	0.10	8.93	0.91	65.57	2732	1877	5.41
Average							1717	4.95
Group 5								
Punjab-urban	2000–2500	0.29	7.36	2.15	67.72	2268	1920	5.54
Balochistan-urban	2000–2500	0.02	6.70	0.11	67.83	2345	1947	5.62
NWFP-rural	3000–3500	0.07	10.07	0.70	68.53	3212	1980	5.71
Balochistan-rural	2000–2500	0.09	6.52	0.59	69.13	2238	2027	5.85
Sindh-rural	2000–2500	0.19	7.54	1.46	70.59	2226	2039	5.88
Sindh-rural	2500–3000	0.10	9.34	0.95	71.54	2707	2048	5.91
Punjab-rural	2000–2500	0.58	7.39	4.29	75.83	2231	2084	6.01
Balochistan-rural	3000–3500	0.02	9.48	0.14	75.97	3264	2122	6.12
Sindh-urban	2500–3000	0.15	7.59	1.16	77.13	2784	2190	6.32
NWFP-urban	3000–3500	0.01	8.75	0.12	77.25	3223	2191	6.32
Balochistan-urban	2500–3000	0.01	7.00	0.09	77.34	2766	2211	6.38
Balochistan-rural	3500–4000	0.01	10.72	0.11	77.44	3861	2244	6.47
Punjab-urban	2500–3000	0.18	7.69	1.40	78.85	2760	2248	6.49
Punjab-rural	2500–3000	0.29	8.42	2.43	81.28	2713	2257	6.51
Baluchistan-urban	3000–3500	0.01	8.26	0.06	81.34	3314	2289	6.60
Average							2101	6.06

Continued –

Table 3 – (*Continued*)

Region	Income Class	No. of Households (Millions)	Household Size	Population (Millions)	Cumulative Population (Millions)	Income per Household (Rs)	Purchasing Power per Standard Household	Standardized Income Size in Feet
Group 6								
Sindh-rural	3000–3500	0.05	9.95	0.50	81.84	3238	2314	6.67
Sindh-urban	3000–3500	0.10	8.37	0.87	82.71	3272	2360	6.81
NWFP-rural	3500–4000	0.04	9.84	0.41	83.12	3797	2389	6.89
Balochistan-urban	3500–4000	0.00	8.92	0.04	83.17	3754	2420	6.98
NWFP-urban	3500–4000	0.01	9.12	0.09	83.25	3789	2481	7.16
Punjab-rural	3000–3500	0.17	8.84	1.46	84.71	3215	2560	7.39
Punjab-urban	3000–3500	0.13	7.75	1.04	85.75	3256	2635	7.60
NWFP-rural	4000–4500	0.02	9.70	0.18	85.93	4233	2699	7.79
Punjab-urban	3500–4000	0.10	8.34	0.84	86.77	3737	2833	8.17
Sindh-urban	3500–4000	0.06	7.88	0.44	87.22	3763	2864	8.26
Punjab-rural	3500–4000	0.11	9.16	1.03	88.24	3730	2877	8.30
NWFP-urban	4000–4500	0.01	8.75	0.07	88.31	4245	2885	8.32
Sindh-urban	4000–4500	0.04	9.04	0.39	88.70	4315	2905	8.38
Sindh-rural	3500–4000	0.03	8.91	0.24	88.94	3700	2921	8.43
Balochistan-urban	4000–4500	0.01	7.67	0.05	88.99	4233	3122	9.01
Sindh-rural	4000–4500	0.02	9.47	0.17	89.16	4240	3169	9.14
Punjab-rural	4000–4500	0.07	9.11	0.63	89.79	4226	3276	9.45
Punjab-urban	4000–4500	0.07	7.82	0.52	90.31	4212	3381	9.75

Continued –

Table 3 – (*Continued*)

Balochistan-urban	>4500	0.01	10.07	0.13	90.44	6940	4009	11.57
NWFP-rural	>4500	0.07	11.35	0.78	91.22	7513	4150	11.97
Sindh-urban	>4500	0.20	9.44	1.91	93.13	7081	4584	13.22
Sindh-rural	>4500	0.04	10.34	0.45	93.57	6890	4754	13.71
Punjab-urban	>4500	0.22	8.73	1.91	95.49	7040	5123	14.78
NWFP-urban	>4500	0.03	8.06	0.28	95.76	7030	5142	14.83
Punjab-rural	>4500	0.18	9.27	1.68	97.45	7113	5428	15.66
Balochistan-rural	>4500	0.04	7.29	0.26	97.70	7962	6542	18.87
Average							3746	10.81
Average/Total		15.4	6.34	97.70	97.70	1900	1900	5.50

Table 4

Estimated Population Share per Income Group, Pakistan, 1985-86 (in percentages)

ALL GROUPS

	Urban	Rural	Total
Punjab	16.6	39.0	55.6
Sindh	10.4	12.7	23.1
NWFP	2.0	13.2	15.2
Balochistan	0.9	5.2	6.1
Total	29.9	70.1	100

GROUP 1 (Poorest)

	Urban	Rural	Total
Punjab	10.6	52.3	62.9
Sindh	2.3	12.3	14.6
NWFP	3.4	11.8	15.2
Balochistan	0.1	7.2	7.3
Total	16.4	83.6	100

GROUP 2

	Urban	Rural	Total
Punjab	21.9	27.6	49.5
Sindh			
NWFP		39.0	39.0
Balochistan	1.2	10.3	11.5
Total	23.1	76.9	100

GROUP 3

	Urban	Rural	Total
Punjab	17.0	34.2	51.2
Sindh	18.8	21.3	40.1
NWFP	2.7		2.7
Balochistan	1.1	4.9	6.0
Total	39.6	60.4	100

GROUP 4

	Urban	Rural	Total
Punjab		49.1	49.1
Sindh	9.7	19.6	29.3
NWFP	2.8	16.8	19.6
Balochistan		2.0	2.0
Total	12.5	87.5	100

GROUP 5

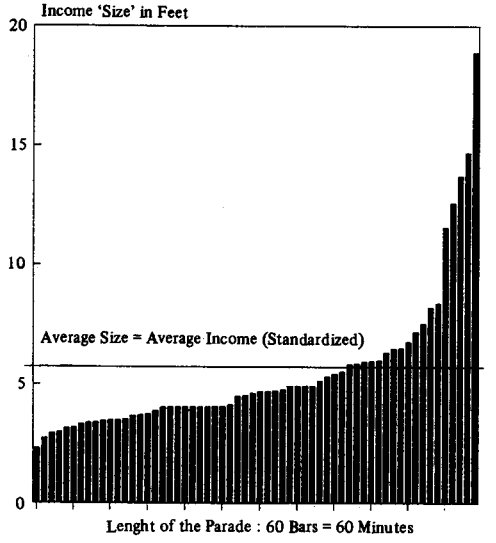
	Urban	Rural	Total
Punjab	22.5	42.6	65.1
Sindh	7.3	15.3	22.6
NWFP	0.7	4.5	5.2
Balochistan	1.7	5.4	7.1
Total	32.2	67.8	100

GROUP 6 (Richest)

	Urban	Rural	Total
Punjab	26.3	29.3	55.6
Sindh	22.1	8.3	30.4
NWFP	2.6	8.4	11.0
Balochistan	1.4	1.6	3.0
Total	52.4	47.6	100

and also desirable – to extend the number of characteristics like occupation, working status, age, level of education, etc. of the over-represented parties in each group.

What do we see? In the first seconds, we see very tiny gnomes pass by, the size of a match-stick.[2] But this does not go on for long, the average length during the very first minute is already more than two feet (see Graph 1 and Table 3). During the first ten minutes an over-represented group from rural Baluchistan, rural Punjab and urban NWFP passes by (see Table 4). The impact of standardization on each position in the queue is illustrated once more by Table 3. The average size of the marchers going by after exactly ten minutes (NWFP-urban) is not (according to unstandardized incomes) twice as high as those of the first minute (Baluchistan-urban), but they are less than fifty percent taller. They are still dwarfs of about 3.5 feet. During the second period of ten minute, the size of the marchers does not increase much. After twenty minutes people are about four feet. In this group residents from rural areas of NWFP and Baluchistan are highly over-represented. As far as townsmen are concerned, Punjab and Baluchistan are over-represented. Twenty minutes is a long time to keep seeing small people passing by who barely reach to our midriff.



Graph 1 : The Pakistani Parade 1985-86

[2]The lowest monthly household income reported is Rs 30, which corresponds with a size of less than two inches (this figure together with the highest income reported are the only two figures that are derived from tape data; since the tape of 1985-86 is not operational yet, these extreme figures are from the tape of 1984-85, as mentioned earlier all other calculation are based on grouped data and made on a personal computer).

Looking in the direction of the approaching parade to see what we can expect next, we still cannot observe normal people. We keep seeing dwarfs. After half an hour the size of the marchers is less than 4.7 feet. During the last ten minutes, we have seen many Sindhi's. In fact, this is the first group where Sindhi's – both from rural and from urban areas are over-represented. It takes exactly forty minutes before we can see people of our own size arriving (average standardized household income is 1900 rupees per month in 1985-86). They mainly belong to the rich of the countryside. The group of 'normal' people is fairly small. After fifty minutes the size of the marchers has increased to over 6.5 feet. More than fifty percent of the richest group are city-dwellers, while the overall percentage of urban population is about thirty percent only. Urban areas of all the four provinces are over-represented in the richest group. The average size of marchers passing by in the last few minutes increases rapidly. Average size in the last minute is nearly twenty feet. During the last few seconds, we see people like tower flats. The highest household income reported in 1984-85 HIES corresponds with a size of about five hundred feet. This giant family has an income of Rs 244,000 per month.[3]

5. CONCLUSIONS

First, the impact of standardization is substantial. Nominal incomes have to be adjusted for household size, economies of scale within households, and last but not least for regional price differences.

Secondly, the parade is a more fascinating and appealing way of looking at the distribution of income than other inequality indicators like Gini or Theil coefficients. The parade is mainly a parade of dwarfs with a few giants only. It takes forty minutes before average income passes by.

Thirdly, the parade has the attractive property that the participants can be identified which is extremely useful for policy preparation and for analyzing changes in the relative positions of household groups over time. Distribution indicators like Gini and Theil coefficients are not affected by a mutual exchange of households in the distribution. In other words, if two households exchange positions in the queue, the distribution itself will remain the same. However, exchange of positions is important information for understanding determinants of the distribution and for analyzing the impact of distribution policies. As mentioned earlier, in this paper only one attribute has been selected, viz. regions. Of course, it is possible to extend the number of characteristics like occupation, working status, age, education, source

[3]Commenting upon an earlier draft of this paper, Pen points to the non-appearance of real giants in this parade: 500 feet is not much compared to e.g. the Duke of Westminster who is about 20 miles [see *The Economist* (1987)]. Apparently, in Pakistan, these giants do not report to the HIES.

of income, etc.

Finally, although these kind of exercises do not give great precision, it is a challenge to keep trying to be as accurate as possible and to see what can be done with the available data.

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Comments on "The Distribution of Purchasing Power in Pakistan, 1985-86"

Kruijk has an interesting paper. It is a snapshot of Pakistan's income distribution/purchasing power at one point in time, 1985-86. Jan Pen described the typical income distribution in a market economy as a parade of countless dwarfs and a few giants in 1971. Kruijk uses the same device.

Estimation

He uses HIES grouped data. The basic unit used for comparison is the household. To make different family sizes equivalent, household income is divided by a deflated family size. Dividing income by family size alone does not make per capita incomes comparable. Economies of scale in household consumption accrue to larger families. So dividing by family size reduces income for large households disproportionately. Kruijk alternatively uses 1 for head of household, and 0.5 for each family member. I suggest alternatively 1 for adults and 0.5 for children.

Results

The most important aspect of this paper is that it does a regional comparison of purchasing power. Given the debate on regional access to resources, this kind of analysis is needed. He uses purchasing power/household to rank provinces. All urban areas have the highest rank, followed by rural areas in the following order.

Urban : Sind, Punjab, Baluchistan, NWFP.
Rural : Punjab, Sind, Baluchistan, NWFP.

So the two most prosperous provinces are Punjab and Sind. The result also shows a clear urban bias.

He ranks provinces within each income group. The sample is divided into 6 income groups. For a non-biased distribution, provincial distribution within each income group should be same as provincial distribution of the population c.f. rural Punjab has 39 percent of total population. So within each income group rural Punjab should have a 39 percent share. But actually in the poorest group rural Punjab has a 52 percent share so it is over-represented. So rural Punjab is both the most prosperous and has the largest percentage of the poor. This polarisation of income is a very interesting result, a product of the high rate of growth and the

particular pattern of growth in rural Punjab. However this is not pointed out by Kruijk.

In fact this is the fundamental shortcoming of this paper, that it presents a set of interesting statistics but makes no attempt to analyse them. There is no attempt to establish a regional pattern to this income distribution. There is no attempt to explain *a priori* why a particular regional pattern should hold. No hypotheses about growth of income across provinces. There is no attempt to explain *a fortiori* why a regional pattern does hold – no testing of these hypotheses and a causal explanation of the prevalent phenomena.

I do see a regional pattern. And I can venture some hypotheses to explain this pattern.

(a) The Punjab has had high growth and structural change in agriculture. Therefore polarization of income is expected in agriculture. It has had high growth in manufacturing. Growth in manufacturing in itself does not lead to polarization, but to a skewed distribution towards the upper end of the scale. Table 4 shows that the Punjab is over-represented in the poorest and two richest income groups. Rural Punjab is over represented in the poorest and richest groups. This supports polarization of rural income. Urban Punjab is over represented in the richest income group. This supports skewness of manufacturing income.

(b) Sind has not had any structural change in agriculture, so no rural polarization is expected. Sindh has had high growth in manufacturing. This should lead to a skewed distribution of urban income. This should also lead to a skewed distribution of total income for Sindh. Table 4 shows that Sind is over-represented in the richest income group. And this is due to urban Sind. Rural Sind shows no polarization.

(c) NWFP and Baluchistan have had neither structural change in agriculture nor significant growth in manufacturing. So neither polarization nor skewness of income is expected in each province. Table 4 shows that both provinces are not over-represented in the poorest and richest income groups.

So the statistics presented have a lot of potential. But they are just dead figures without analysis and causal explanations.

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