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Income-Specific Inflation Rates in Pakistan

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In this paper an attempt has been made to find the inflation rates which were faced by households belonging to different income brackets and living in different areas. The results of this study do not show any consistent pattern of inflation being higher or lower for the rich or the poor households. During 1971-72 and between 1978-79 and 1980-81, households in the lower income brackets were found to be facing lower inflation rates. These were the years when food prices rose at lower rates than those of the prices of non-food items. These differences, however, disappeared in 1981-82 when food prices rose sharply, resulting in a higher inflation rate for the poor than for the rich. The numerical magnitudes of the differences were, however, not very high.

INTRODUCTION

The distributional effects of inflation are quite well known in economic literature. Inflation affects the distribution of both income and wealth. Nominal incomes of some individuals or households tend to increase with inflation, while those of others remain constant, thus causing a change in the distribution of income in favour of the former group. The wealth effect depends on the net worth of the households. It is primarily the size and the composition of assets and liabilities of households in different income groups that determine the net effect of inflation on the distribution of wealth. Other redistributional effects of inflation are the cost-of-living effects or the expenditure effects. The life styles of the rich and the poor, and their expenditure patterns are usually quite different. The impact of inflation on the cost of living depends on the weights given by households to different commodities in their consumption bundles, and the rates at which the prices of those commodities increase. The differences in the costs of living tend to change the distribution of real income even though the nominal incomes of all households may be increasing at the same rate.

The objective of this study is to find the cost-of-living effects of inflation for households in various income brackets in rural and urban areas in Pakistan. The Government of Pakistan has recently introduced the policy of indexing wages and

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salaries to inflation. This policy implicitly assumes that the rate of inflation is the same for households belonging to different income brackets. It would therefore be interesting and useful to find the changes in the cost of living faced by households, according to both their level of income and their location. This analysis examines questions like (a) whether the impact of inflation is different on rich and poor households, and if it is, by what magnitude, and (b) whether the rural and urban households in given income groups face the same rate of inflation or not.

Inflation rates faced by individuals and households in different income groups have been calculated for different countries by a number of authors. The results of the studies by Afridi *et al.* [2], Muellbaur [3], Tipping [13], and Williamson [14] showed that the price of the bundle of goods and services consumed by the poor rose faster than the corresponding price faced by the rich. Palmer and Barth [12], on the other hand, found that although the effects of inflation were different for individuals in different income groups, the differences were only negligible. Price indices computed by Naseem [4] for households in different income groups did not have any specific pattern.

Out of the above-mentioned studies, only those by Naseem and Afridi *et al.* were for Pakistan. The methodologies followed by them were, however, quite different. Naseem constructed income-specific price indices for urban and rural households for the years 1963-64, 1966-67, 1968-69, and 1969-70. He constructed the indices by weighting the prices of commodities consumed by households in various income groups by their respective budget shares. Afridi *et al.* used a different method to arrive at the inflation rates faced by households and individuals in different income groups. Using data from Micro-Nutrient Survey 1976-77 [10], they divided total consumption expenditure into two categories of food and non-food items. The overall inflation rates for these two categories were taken from the study by Afridi and Qadir [1], where in the first category they had 16 commodities which they described as 'basic foods' – all produced in the agricultural sector. In the second category they had 28 commodities, consisting of finished industrial products, industrial raw materials, and cash crops from the agriculture sector. The inflation rates for these two categories were weighted by the expenditure shares on food and non-food items to arrive at the overall inflation rates for different income groups. The main problem with their approach is the treatment of the second category. Major portions of non-food expenditures of households are on housing, fuel and lighting, and various kinds of services, but these items were not considered at all in computing the inflation rate for the second category. On the other hand, most of the items included in that category are the ones that are not directly consumed by households.

Another rather unusual aspect of their study is the treatment of interest rate. According to them, people in the lower income groups borrow to finance their

expenses, and the interest which they pay on the borrowed money is treated as positive inflation for them. On the other hand, people in the upper income groups are able to save and the interest which they receive on their savings is treated as negative inflation for them. This treatment of interest is unjustified because, according to the implications of their analysis, as long as the interest rate is positive, even with no change in the prices of commodities the inflation rate would be positive for the borrowers (lower income groups) and negative for the savers (higher income groups).

METHODOLOGY

The differences in the inflation rates faced by the rich and the poor households are due to two factors: the rate at which the prices of various commodities change, and the weights assigned by households to different commodities in their consumption baskets. Take, for example, a case where different households have different consumption patterns but where the prices of different commodities increase at the same rate. In this case the cost of living would change by the same magnitude for all households irrespective of their levels of income. Inter-group differentials would therefore be non-existent. In the opposite case, where consumption patterns are the same but the prices of different commodities increase at different rates, changes in the cost of living would again be the same for both rich and poor households. Inter-group differentials in the cost of living would exist only if the consumption patterns of the rich are different from those of the poor, and the prices of different goods change at different rates. Similar argument also holds in the case of urban/rural differentials.

It may be interesting to examine the phenomenon of rising prices and the existence of inter-commodity price differentials. But whatever factors are responsible for such phenomenon, we are not directly concerned with them and in this paper make no attempt to offer any explanation. Instead, we take the given price changes and focus on their effects on the cost of living faced by households in different income categories.

The analytical framework of this paper is quite simple and similar to the one used in most of the earlier works [4; 12; 13]. To find the inflation rate faced by households in a particular income group during a given year we used the following relationship:

$$\dot{P}_j = w_{1j}\rho_1 + w_{2j}\rho_2 + \ldots + w_{nj}\rho_n$$

and

$$\sum_{i=1}^{n} w_{ij} = 1$$

where

$\dot{P}_j$ = Inflation rate faced by households in the jth income group,

w_{ij} = Proportion of expenditure on commodity i by households in income group j, and

ρ_i = Annual rate of inflation for commodity i (where $i = 1, 2, \ldots, n$).

Total household expenditure for each income group was divided into four categories, viz. food and drinks, clothing and footwear, housing, and miscellaneous. The proportions of expenditure on these categories by households in different income groups were taken from different Household Income and Expenditure Surveys. In particular the data for 1970-71 were taken from [7], for 1971-72 and 1972-73 from [8], and for 1978-79 to 1981-82 from [5]. The latest Household Income and Expenditure data were available only for the year 1979. We therefore used 1979 expenditure weights for the four-year period from 1978-79 to 1981-82. Annual percentage changes in the consumer price indices CPIs for 'food, beverages, and tobacco', 'apparel, textiles, and footwear', 'housing and household operations', and miscellaneous items were computed from [9] for the period from 1970-71 to 1972-73, from [11] for the years 1978-79 to 1980-81, and from [6] for 1981-82. Since no separate price indices were available for urban and rural areas, we used the same price indices to compute the annual percentage changes for both areas. The implicit assumption is that prices of different commodities had been changing at the same rates in the two areas.[1] This assumption may not be very unrealistic even though the absolute price levels of some of the commodities may be different in rural and urban areas.

THE COST-OF-LIVING EFFECTS OF INFLATION

Annual percentage changes in the consumer price indices of different categories of commodities are given in Table 1. The rate of inflation varies not only for a given category from year to year but also across categories in any given year. While inter-temporal variations have significant economic implications, what is important for the purpose of computing the effects of inflation at a given time on the costs of living of households in different income groups is the variation in price changes across commodity groups. It is quite evident from figures in Table 1 that although throughout the period covered by this study the prices of all goods increased continuously, the rates at which they increased were in most cases quite different.

[1] Naseem in his study [4] also implicitly makes the same assumption.

Table 1

Annual Percentage Changes in the Consumer Price Indices of Different Categories of Commodities

Year	General	Food, Beverages and Tobacco	Apparel, Textiles and Footwear	Housing and Household Operations	Miscellaneous
1970-71	5.71	5.97	5.00	4.08	6.46
1971-72	4.69	3.39	4.09	5.91	9.02
1972-73	9.70	10.59	11.33	4.91	8.32
1973-74	30.06	34.80	44.61	22.91	16.56
1974-75	26.65	27.81	24.70	25.60	17.00
1975-76	11.66	10.97	9.39	14.49	12.58
1976-77	9.24	10.22	2.89	10.39	8.09
1977-78	6.89	6.04	8.07	6.45	9.39
1978-79	8.33	6.62	4.81	8.79	15.33
1979-80	10.40	7.94	7.82	11.89	18.14
1980-81	13.85	13.61	10.45	15.07	14.66
1981-82	11.54	14.13	6.90	7.68	10.28

Source: Based on the consumer prices indices contained in [6; 9; 11].

During certain years food prices increased at much higher rates compared to the prices of non-food items, while at other times the opposite was true. In 1976-77 the inflation rate for food items (10.22%) was more than three times the rate at which the prices of 'apparel, textiles, and footwear' increased (2.89%). The corresponding figures for these two categories in 1981-82 were 14.13 percent and 6.90 percent respectively. Similarly, 1978-79 was another year during which prices of different commodity groups changed at substantially different rates, when prices of food, clothing and footwear, housing, and miscellaneous items increased at the rates of 6.62 percent, 4.81 percent, 8.79 percent, and 15.33 percent respectively.

Percentage distributions of monthly consumption expenditures of urban, rural and all households in Pakistan are given in Table 2 according to the incomes of those households. These distributions are for 1979 only and are given here for illustrative purposes. A cursory look at the figures in the table shows the differences in the consumption patterns of the rich and the poor, and also of the urban and rural households. In rural areas whereas 58 percent of the consumption expenditure of the households in the lowest income bracket is on food, beverages, and tobacco, the expenditure on this category by households at the other end of the income scale is

Table 2

Percentage Distributions of Monthly Household Consumption Expenditures in Rural, Urban and All Areas (1979)

Monthly Income Groups (Rupees)	Food and Drinks			Clothing and Footwear			Housing			Miscellaneous		
	Rural	Urban	All	Rural	Urban	All	Rural	Urban	All	Rural	Urban	All
All groups	55.0	46.4	52.20	10.2	9.0	9.82	13.6	21.5	16.38	21.2	23.1	21.60
Up to 300	58.0	51.8	57.29	11.4	9.9	11.23	16.8	22.5	17.46	13.8	15.8	14.03
301–400	58.4	56.2	58.12	10.8	9.9	10.68	15.8	20.6	16.42	15.0	13.3	14.78
401–500	58.0	55.5	57.61	10.8	10.0	10.61	15.3	19.5	16.03	15.9	15.0	15.76
501–600	58.0	54.6	57.41	10.5	9.7	10.36	14.4	19.9	15.36	17.1	15.8	16.87
601–800	57.3	52.6	56.31	10.5	9.7	10.33	13.7	19.3	14.88	18.5	18.4	18.48
801–1000	55.6	51.7	54.50	10.2	9.4	9.98	12.8	20.0	14.82	21.4	18.9	20.70
1001–1500	55.0	50.4	53.01	10.3	9.5	9.76	13.1	19.9	15.16	21.6	20.2	23.07
1501–2000	52.2	47.4	49.99	9.7	9.3	9.52	13.4	21.0	16.91	24.7	22.3	23.59
2001–2500	51.2	45.6	48.74	9.6	9.0	9.38	13.3	22.0	18.01	25.9	23.4	23.88
2501–3000	49.9	40.5	44.01	9.1	8.2	8.54	13.1	22.5	18.99	27.9	28.1	28.46
3001–3500	46.9	39.9	42.50	9.9	8.3	8.89	11.2	23.7	19.06	32.0	28.1	29.55
3501 and above	37.8	32.6	36.18	8.1	7.4	8.03	13.1	25.9	22.44	41.0	34.1	33.35

Note: Data for rural and urban areas are taken from the *Household Income and Expenditure Survey 1979* [5]. Data for all areas are weighted averages of the rural and urban areas figures, the weights being proportions of households in the two areas.

only 37.8 percent. In the case of miscellaneous goods it is just the opposite, with expenditure by the former group constituting 13.8 percent and by the latter group 41 percent of their total consumption expenditure. Same is the case in urban areas where the expenditure patterns are similar but the magnitudes are different. These figures thus show that the poor spend more on food and less on other goods, and as their incomes increase they spend decreasing proportions of their additional incomes on food, and increasing proportions on non-food items.

Comparing the expenditure patterns of the rural and urban households, we find that, in general, at all income levels, the former spend relatively more on food and drinks, clothing and footwear, and miscellaneous goods and services. Housing is the only item on which rural households spend relatively small proportions of their incomes. In 1979, 22.5 percent of the total consumption expenditure of the poorest households in urban areas was on this category while the corresponding figure for rural areas was only 16.8 percent.

Rich–poor expenditure differntials are highest in the case of 'food, beverages and tobacco', followed by miscellaneous items. As can be seen from Table 2, these two categories constitute around 70 percent of the total household consumption expenditure. Differences in the proportions of income spent by the rich and the poor households on the other two categories, viz. 'apparel, textile, and footwear', and 'housing and household operations', are not so significant. It is therefore primarily the first two categories of commodities that determine the inter-group differentials. The poor face higher inflation rates when food prices increase at a relatively high rate and conversely the inflation rate is higher for the rich when the increase in the prices of miscellaneous goods is relatively high.

Effective inflation rates faced by rural and urban households in different income groups from 1970-71 to 1972-73, and from 1978-79 to 1981-82, are given in Table 3. In 1970-71 the inflation rates faced by rural as well as urban households in the lowest income bracket were almost the same as those faced by the households in the highest income bracket. This was so mainly because of the fact that the prices of food, drinks and miscellaneous items increased at almost the same rate during that year. In 1971-72, on the other hand, when the prices of miscellaneous items rose at a faster rate than the one at which food prices increased, the high-income households faced somewhat higher inflation rate in both areas. Unlike the previous two years, in 1972-73 food prices increased at a faster rate (10.59%) compared to the prices of miscellaneous goods (8.32%), with the result that the poor households faced higher inflation rate than the rich households. The inflation rates faced by the households in the lowest and highest income brackets were respectively 9.75 percent and 8.83 percent in rural areas, and 9.09 percent and 8.49 percent in urban areas.

During the three-year period between 1978-79 and 1980-81, the CPIs for food rose by smaller percentages relative to the CPIs for miscellaneous goods (Table 1).

Table 3

Inflation Rates for Rural and Urban Households in Different Income Groups

Monthly Income Groups (Rupees)	1970-71		1971-72		1972-73		Monthly Income Groups (Rupees)	1978-79		1979-80		1980-81		1981-82	
	Rural	Urban	Rural	Urban	Rural	Urban		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Less than 50	5.84	5.55	4.66	4.82	9.75	9.09	Up to 300	8.04	8.35	10.00	10.43	13.72	13.86	11.60	11.28
50–99	5.62	5.59	4.60	4.68	9.55	9.20	301–400	8.13	8.09	10.08	10.10	13.74	13.82	11.66	11.49
100–149	5.68	5.60	4.65	4.70	9.58	9.36	401–500	8.19	8.22	10.15	10.23	13.74	13.81	11.66	11.49
150–199	5.70	5.61	4.71	4.79	9.59	9.32	501–600	8.28	8.30	10.24	10.33	13.75	13.84	11.70	11.45
200–249	5.71	5.61	4.77	4.84	9.60	9.27	601–800	8.39	8.51	10.36	10.57	13.75	13.85	11.69	11.40
250–299	5.73	5.63	4.74	4.89	9.62	9.28	801–1000	8.63	8.58	10.62	10.65	13.78	13.88	11.66	11.36
300–399	5.74	5.64	4.93	4.97	9.56	9.24	1001–1500	8.65	8.69	10.65	10.78	13.78	13.88	11.63	11.31
400–499	5.77	5.65	5.00	5.08	9.60	9.23	1501–2000	8.93	8.89	10.98	10.03	13.83	13.92	11.54	11.17
500–749	5.80	5.66	5.23	5.29	9.53	9.15	2001–2500	9.04	9.02	11.10	11.19	13.84	13.96	11.50	11.09
750–999	5.91	5.63	5.21	5.54	9.31	8.94	2501–3000	9.21	9.51	11.29	11.76	13.88	14.04	11.48	10.92
1000–1499	5.88	5.60	5.70	5.65	9.29	8.77	3001–3500	9.52	9.47	11.63	11.73	13.86	14.04	11.39	10.86
1500–1999	5.65	5.72	5.38	5.84	8.46	8.52	3501 & above	10.37	10.05	12.63	12.43	14.03	14.16	11.06	10.56
2000 & above	*	5.61	5.73	6.46	8.83	8.49									

Source: Based on data drawn from [5; 6; 7; 8; 9 and 11].

*No household was reported for this income group in the *Household Income and Expenditure Survey 1970-71* [7].

The impact of these price changes was thus greater on the rich who spend larger proportions of their incomes on miscellaneous goods. In 1978-79, for example, the cost of living for rural households with a monthly income of less than 50 rupees went up by 8.04 percent, but the corresponding increase was 10.37 percent for households with a monthly income of Rs. 3501 and above. Same was the case in urban areas. This situation was, however, changed in 1981-82 when food prices rose by 14.13 percent while the prices of miscellaneous goods increased by only 10.28 percent. The cost of living for households in the lowest income bracket increased during that year by 11.60 percent in rural areas and by 11.28 percent in urban areas. The corresponding figures for households in the highest income bracket were 10.06 percent and 10.56 percent.

Concerning the rural-urban differentials in the inflation rates faced by households in different income brackets, Table 3 shows that the rural households in most income brackets faced higher inflation rates during 1970-71, 1972-73, 1978-79, and 1981-82. Rural households generally spend less on housing and more on other items. When the weighted average of the inflation rates for food, clothing and miscellaneous items exceeds the inflation rate for housing, the overall inflation rate for rural households tends to be higher than the corresponding rate for urban households. This is exactly what happened in the present case. Urban inflation rates, on the other hand, were greater than rural inflation rates during 1971-72, 1979-80, and 1980-81. These were the years when the inflation rates for housing were greater than the inflation rates for food and clothing. Looking at the numerical values in Table 3 one finds that just as the differences in the inflation rates for the rich and the poor households are minor, the urban-rural comparisons also show that income-specific inflation rates in the two areas are only marginally different.

Figures in Table 4 are for all areas, i.e. for rural and urban areas combined. These figures are weighted averages of the corresponding rural and urban values and therefore they show the same trend as discussed above. In the country as a whole, poor households faced higher inflation rates during 1970-71, 1972-73, and 1981-82, while rich households had relatively high rates during 1971-72 and between 1978-79 and 1980-81. The rich–poor differential was minimum in 1970-71 and maximum in 1979-80.

Besides computing inflation rates for households belonging to different income groups, with the help of linear interpolation, an exercise was also carried out to find inflation rates for households in different income deciles. The already narrow inter-group differentials in the original classification were further smoothened out in this case but it provided little additional information. The results are therefore not reported here.

Finally, a note of caution about some of the limitations of the results of this study. These limitations are due to paucity of data. Since household expenditure

Table 4

Inflation Rates for All Households in Different Income Groups

Monthly Income Groups (Rupees)	1970-71	1971-72	1972-73	Monthly Income Groups (Rupees)	1978-79	1979-80	1980-81	1981-82
Less than 50	5.81	4.68	9.63	Up to 300	8.07	10.05	13.74	11.57
50–99	5.62	4.61	9.51	301–400	8.12	10.08	13.75	11.64
100–149	5.68	4.66	9.54	401–500	8.19	10.17	13.76	11.64
150–199	5.67	4.72	9.55	501–600	8.28	10.26	13.76	11.65
200–249	5.70	4.80	9.50	601–800	8.41	10.40	13.77	11.63
250–299	5.69	4.77	9.54	801–1000	8.61	10.62	13.80	11.57
300–399	5.68	4.95	9.45	1001–1500	8.82	10.88	13.84	11.48
400–499	5.71	5.03	9.45	1501–2000	8.91	11.00	13.88	11.37
500–749	5.73	5.26	9.34	2001–2500	8.96	11.08	13.90	11.30
750–999	5.74	5.39	9.09	2501–3000	8.39	11.58	13.98	11.13
1000–1499	5.67	5.68	9.09	3001–3500	9.48	11.70	13.98	11.06
1500–1999	5.68	5.72	8.51	3501 & above	9.90	12.22	14.08	10.76
2000 & above	5.61	6.22	8.60					

Source: Same as for Table 3.

distribution data were not available for all years, 1971-72 distributions were used for 1972-73, and similarly 1979 distributions were used for the period from 1978-79 to 1981-82. Income-specific inflation rates for these years, therefore, show only the effects of price changes and do not include the substitution effect that might have taken place in households consumption owing to changes in the relative prices of different commodities. Another limitation of the results is due to lack of information concerning separate prices of different commodities paid by the rich and the poor households. In the case of housing, for example, the rents paid by households in different income brackets may not move in a uniform manner. In the absence of any such data, we were constrained in this study to use the same price indices of different commodities to compute inflation rates for both the rich and the poor.

SUMMARY AND CONCLUSIONS

In this paper an attempt has been made to find the inflation rates which were faced by households belonging to different income brackets and living in different areas. The results of this study do not show any consistent pattern of inflation being higher or lower for the rich or the poor households. During 1971-72 and between 1978-79 and 1980-81, households in the lower income brackets were found to be facing lower inflation rates. These were the years when food prices rose at lower rates than those of the prices of non-food items. These differences, however, disappeared in 1981-82 when food prices rose sharply, resulting in a higher inflation rate for the poor than for the rich. The numerical magnitudes of the differences were, however, not very high.

Concerning the differences in the inflation rates faced by households in urban and rural areas the results of the study show that urban households faced somewhat higher inflation rates during 1971-72, 1979-80, and 1980-81. These were the years when inflation rate for housing rose at higher rates relative to the inflation rates for food and clothing.

Finally, the finding that the differences in the inflation rates faced by the rich and the poor as well as by urban and rural households are only marginal lends support to the official policy of using a uniform rate for indexing wages and salaries.

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