How Do the Poor Respond to Rising Prices?

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INTRODUCTION

Recent estimates show that after falling in the 1980s, poverty has made a comeback in Pakistan during the 1990s. The Government of Pakistan (GOP) estimate show an increase in caloric poverty headcount from 17 percent in 1987-88 to 33 percent in 1998-99 and also rising income inequality during the 1990s.[1] In contrast preliminary estimates by the World Bank show that poverty may not have risen as rapidly during the 1990s and may even have stagnated.[2] Slow down in economic growth, rising open unemployment, rising food and non-food prices, reduction in the fiscal space for pro-poor public programmes, poor governance hampering delivery of social services to the poor; are factors that have been attributed to the growing poverty and vulnerability of households in recent years.

The Government has recently taken some important initiatives to deal with rising poverty. These include the Rs 21 billion Integrated Rural Urban Development public works programme, establishment of the Khushali Bank (Micro-Finance Bank) and the Food Support Programme for poor households with income less than Rs 2000/ PM. These programmes are in addition to the existing public social safety net programmes such as Zakat/Ushr and Pakistan Baitul Maal, and the Social Action Programme. The ongoing work on the Poverty Reduction Strategy Paper (PRSP) is a laudable effort by the government to take poverty issues seriously and to come up with a poverty reduction strategy in a consultative and participatory manner.

What are the demand responses of poor and non-poor households in periods of rising poverty? Do poor households bear a relatively higher burden of rising food prices? Which income groups would be most affected by rising electricity, natural gas and petroleum prices? Which groups are likely to feel the impact of the General Sales Tax on goods and services? This paper is motivated by these questions that are being asked regularly in the media and in discussions on poverty issues by researchers and policy-makers.

[1]Source: *Economic Survey, 1999-2000.*

[2]World Bank estimates preliminary show that Basic Needs poverty headcount was 27 percent in 1996-97, compared to 35 percent in 1990-91.

In providing answers to the questions posed above, we use the well-established Linear Expenditure System (LES) methodology to derive price, cross-price and income elasticity of demand for food and non-food items for different types of Pakistani households. The LES and Extended LES (ELES) models have been used extensively in the Pakistani literature to study household behaviour [See Ali (1985); Ahmad, Ludlow and Stern (1988); Burney and Akhtar (1990) and Burney and Akmal (1991)]. This no cutting edge technique in terms of econometric sophistication, and is also known to have many limitations.[3] However, we feel that this methodology would allow us to get a first cut at answering the above questions, using the rich information on sources of incomes and consumption expenditures from household surveys.

We use the latest available Household Integrated Expenditure Survey (HIES), 1996-97, and disaggregated household categories to analyse household expenditure patterns and demand responses. The HIES 1996-97 is a nationally representative survey of 14,900 households in all four Provinces of Pakistan and in Azad Jammu and Kashmir. We have divided the households by location into rural/urban[4] and within each group into: (1) the Bottom 40 percent, (2) Middle 40 percent and (3) Top 20 percent based on per capita expenditures.[5] The rationale is to take a closer look at demand patterns and responses of households who would be below or close to a Basic Needs poverty line (bottom 40 percent households)[6]; and compare these with responses of the middle and upper income households. Per capita household expenditure, a standard poverty indicator, has been used to rank households.[7] Expenditures rather than incomes have been used in the analysis because of the non-reliability of income data in household surveys in Pakistan.[8]

The profile of the bottom 40 percent households, compared to the Middle 40 percent and Top 20 percent households, shows that the poor have larger families with more children and younger adults; high dependency ratios; very low literacy levels and education of the head of the household; and the head of household mostly employed in agriculture or as self-employed in small or household enterprises.

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[3]The underlying utility function assumes separable additive preferences, which imply that marginal utility of one good is independent of other goods consumed. It also results in linear Engles curves. The reliability of the identification needed to get the elasticity estimates is also questionable. Elasticity estimates are strongly influenced by the chosen functional form.

[4]HIES's administrative categories have been used to define rural and urban households.

[5]Initially we divided both rural and urban households into five quintiles based on per capita expenditures. We found fairly similar results for the bottom two quintiles and the 3rd and 4th quintiles. Hence we have aggregated the households into 3 categories: Bottom 40 percent, Middle 40 percent and Top 20 percent.

[6]Several recent estimates of poverty show poverty head counts based on the calorie method to be around 32–33 percent, and basic needs poverty of 35–38 percent. We associate the Bottom 40 percent households as the poor according to the Basic Needs definition.

[7]We also derived results using *household expenditures* as the sorting and the dependent variable. The demand responses were not very different whether we used *per capita* expenditures or *household* expenditures as the dependent variable and hence we only report the former results.

[8]Standard HIES definition of expenditure has been used in this paper, including all monthly and yearly expenditures on non-durable goods and certain annual expenditures on durable goods.

Per Capita Income and Expenditure Trends and Patterns in Pakistan

We first take a look at the aggregate trends of per capita incomes and expenditures of households in Pakistan. Estimates of per capita incomes and expenditures from household surveys and the National Accounts are shown in Table 1.[9] Both the HIES estimates and the National Accounts show that nominal per capita incomes and expenditures rose substantially over the mid-1980s to mid-1990s. HIES estimates indicate a very modest increase in real terms in per capita incomes and expenditures in Pakistan over this period. The picture of stagnating real incomes and expenditures is less evident from the National Account data. Compared to the HIES, the National Accounts estimates of per capita real incomes are 40–60 percent higher and show a slow rising trend during 1987-88 and 1996-97.

There is less discrepancy between the National Accounts and the HIES estimates of real per capita expenditures; the latter are 15–30 percent lower than the former. Still the National Accounts portray a much more optimistic picture of nominal and real per capita expenditure trends in Pakistan compared to the household survey data. To come to definitive conclusions about trends of household incomes and expenditures in Pakistan, there needs to be more compatibility between different sources of data. Using HIES as the more reliable and direct source of data, we find that real incomes have risen on average by 1 percent per capita annually whereas real per capita expenditures have grown by only 0.5 percent between 1987–88 and 1996–97.

Table 1

Nominal and Real Per Capita Annual Incomes and Expenditures (Rs)

	1987-88	1990-91	1992-93	1993-94	1996-97
Household Integrated Expenditure Surveys					
Nominal Income	4059	5804	6731	7329	11150
Nominal Expenditures	3870	5223	6593	7168	10004
Real Income*	2679	2905	2779	2715	2950
Real Expenditures*	2555	2614	2722	2655	2647
National Accounts					
Nominal Income	6862	9546	11749	13373	19212
Nominal Expenditures	4739	6374	8440	9511	14280
Real Income	4379	4656	4809	4852	4992
Real Expenditures	3091	3015	3340	3378	3792

Source: HIES various years; *Economic Survey, 1999-2000*.

Note: *Real incomes and expenditures have been deflated using CPI (1980-81=100). Real incomes and expenditures from the National Account are at constant factor cost of 1980-81.

[9]The National Accounts estimates of nominal and real per capita incomes at market prices have been used as the income indicator. We have taken the nominal and real values of Private Consumption Expenditures from the National Accounts, and divided it by the population to get the series of per capita household expenditures from the National Accounts.

The reasons for these trends could be found in slow down in economic growth rates, rapidly rising price levels, and a relatively high population growth rate. Economic growth rates have slowed down from an average of 6 percent during the 1980s to 5 percent in first half of the 1990s and 4 percent in the latter half. Fig. 1 shows significant annual fluctuations in economic growth rate during 1987-88 to 1996-97. The year for we have done most of our analysis (1996-97) was a pretty bad year—the growth rate was less than 2 percent. Keeping 1987-88 as the base, we find that price levels have increased in general by 2½ times between 1987-88 and 1996-97 (see Fig. 2). The fastest rise in price levels is seen for categories such as food, beverages and tobacco; fuel and lighting; and medicines. These items comprise a major share of the budget of the poorest households as discussed below.

Food forms the bulk of expenditures for both rural and urban households and across different income groups as shown in Tables 2 and 3. Our overall results are quite similar to those reported other studies, showing the dominance of food expenditures in Pakistani household budgets. Not only are the poorest households spending a major portion of their budgets on food, their shares of food expenditures has increased over time.[10] This indicates that the poorest household are bearing an increasingly burden of higher food hikes and reduction in food subsidies.
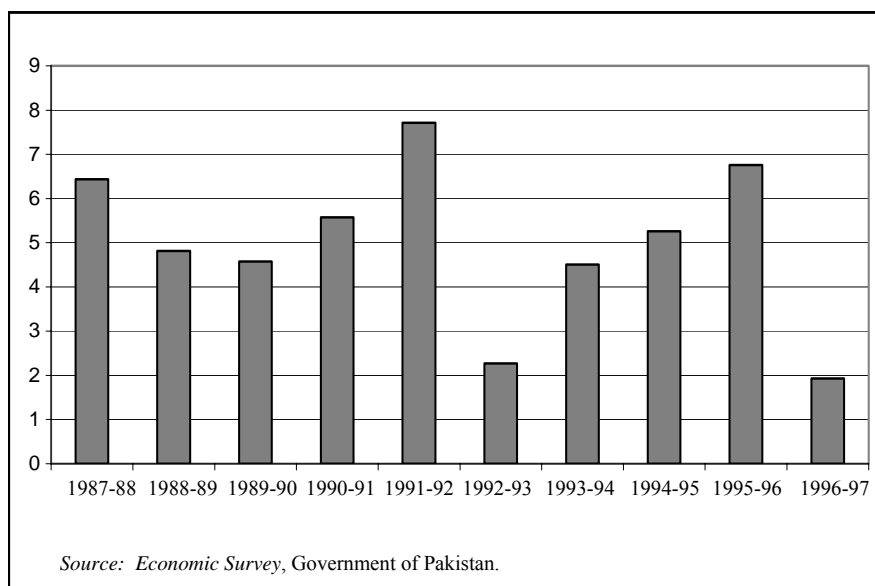

Source: Economic Survey, Government of Pakistan.

Fig. 1. GDP Growth Rate (%).

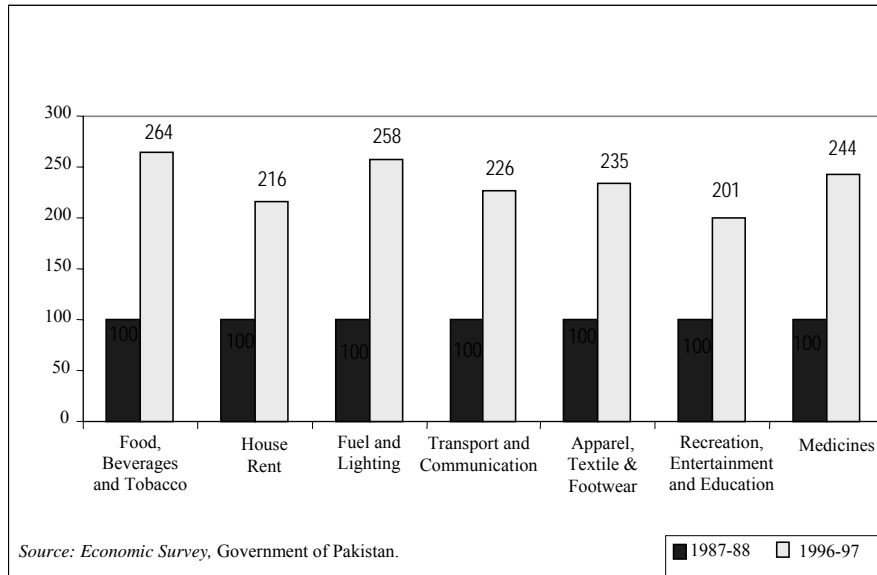[10]The share of food expenditure of the bottom 40 percent has increased by 2-3 percent during 1987-88 to 1996-97.

Fig. 2. Price Indices (1987-88 = 100).

Table 2

Average Per Capita Expenditure Shares—Urban Households (Percent)

	1987-88				1996-97			
	Overall	Bottom 40%	Middle 40%	Top 20%	Overall	Bottom 40%	Middle 40%	Top 20%
Food	42	51	47	39	42	53	47	35
Fuel	5	6	5	5	6	8	7	5
Clothing	5	6	5	4	5	6	6	5
Education	2	1	2	2	2	1	2	2
Footwear	1	2	2	1	1	2	2	1
Housing	21	18	19	23	25	16	21	30
Medical Care	2	2	2	2	2	3	2	2
Personal Care	4	4	4	4	4	4	4	4
Recreation	1	1	1	2	1	0	1	1
Transportation	5	3	4	6	5	2	3	7
Furniture	0	0	0	0	0	0	0	0
Others	11	6	8	13	7	5	5	8
Total	100	100	100	100	100	100	100	100

Source: Calculated from HIES 1987-88 and 1996-97.

Table 3

Average Per Capita Expenditure Shares—Rural Households (percent)

| | 1987-88 | | | | 1996-97 | | | |
	Overall	Bottom 40%	Middle 40%	Top 20%	Overall	Bottom 40%	Middle 40%	Top 20%
Food	53	55	54	49	54	58	56	50
Fuel	5	7	6	5	8	8	8	8
Clothing	5	6	6	5	6	7	7	6
Education	1	0	1	1	1	1	1	1
Footwear	2	2	2	2	2	2	2	2
Housing	11	12	12	11	14	12	13	16
Medical Care	3	2	3	3	3	3	3	3
Personal Care	4	4	4	4	3	3	3	3
Recreation	1	0	1	1	0	0	0	1
Transportation	4	3	3	4	3	3	3	4
Furniture	0	0	0	0	0	0	0	0
Others	12	8	10	15	6	4	5	7
Total	100	100	100	100	100	100	100	100

Source: Calculated from HIES 1987-88 and 1996-97.

There are some distinct differences in the expenditure patterns of rural and urban households. Rural households spend on average 54 percent of their budgets on food, whereas urban household's average per capita food expenditure is 42 percent.[11] Within the food group there are more similarities between rural and urban households expenditures now, compared to what was reported in earlier studies.[12] Except for cereals and milk/milk products, for which the share of rural households is higher, for most other food categories the expenditure patterns of both rural and urban households are quite analogous. This may be due to the "demonstration" effect of urban consumption pattern in rural areas or better marketing and availability of processed foods in rural areas over the years.

As expected, the urban households spend a larger share of their budget on housing, education, transportation and recreation compared to rural households. Higher education expenditures in urban areas are mainly due to higher school fees. According to the Pakistan Integrated Household Survey 1996-97 results, close to 50 percent of the primary school children go to relatively expensive private schools in urban areas. On average annual per capita educational expenses are twice as high in urban areas.[13] Higher valuation of the urban housing stock and relatively higher

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[11]Burney and Akmal (1988) found per capita expenditure on food by rural and urban households to be 52 percent and 44 percent, respectively, using HIES 1984-85. Food expenditures comprised 51 percent of household expenditures in 1979 [see Ali (1985)].

[12]For instance, Ahmad, Ludlow and Stern (1988) and Ahmad and Ludlow (1987) showed significant differences in demand patterns and marginal budget shares between rural and urban areas, based on the 1976 Micro Nutrient Survey and 1979 HIES, respectively.

[13]*Source*: PIHS 1996-97. PIHS data show that both school fees and other educational expenses are higher in urban areas, even in government schools/colleges.

share of expenditures on rented houses in urban areas results in the observed differences in rural and urban housing expenditures.[14] Meanwhile, expenditure allocation on fuel, clothing, footwear, medical care, personal care and others (gifts, ceremonies) are fairly similar across both rural and urban households.

Assuming that HIES surveys of 1987-88 and 1996-97 are fairly comparable, the biggest increase in the expenditures allocations have been on fuel and housing for both rural and urban households. Household budget shares have also increased for food, clothing, and education. Over time, households in Pakistan have allocated an increasing share of their budgets toward basic needs such as food, fuel, housing, education and clothing and have reduced their budgetary allocations for non-essential categories such as recreation, personal care and other expenses (mainly expenses on ceremonies, gifts, etc.). These trends are indicative of tight budget constraint being faced by both rural and urban households, as food and non-food prices have risen over time and real income growth has been relatively slow.

The bottom 40 percent households seem to be burdened with just meeting their basic needs. Close to 85 percent of the budget of the poorest households is taken up by the most essential needs—food, shelter, fuel, and clothing. In both rural and urban areas, the poorest households spend between 53–58 percent of their budget on food. Approximately ¾ of their food budget is spent on 6-7 major items, namely wheat/wheat flour, milk/milk products, ghee, sugar/gur, vegetables, and pulses. Lower or negligible expenditures on housing, recreation, education (in urban areas), and transportation, indicate that these expenditures are generally for poorer quality good and services or for limited quantities.

The expenditure pattern of the *urban Top 20 percent* households is quite distinct. They spend close to ⅓ of their budget each on food and housing, compared to other groups who spend ½ or more of their budget on food and between 12–21 percent on housing. The urban rich spend somewhat lower shares of their budgets on fuel/lighting and use the most efficient energy sources such as piped gas and electricity. In contrast, the fuel/lightning budgets of other groups are largely spend on firewood in rural areas and a combination of firewood, electricity, and gas in urban areas. The urban rich are also the biggest consumers of petroleum products for transportation needs and are most directly hit by increase in POL prices. In contrast, the rural top 20 percent seem relatively middle class in terms of their expenditure behavior, showing expenditure patterns quite similar to the rural and urban middle 40 percent households.

Although the above analysis provides a rather static view of expenditure patterns of Pakistani households at two points in time, some tentative conclusions can be made about dynamic trends as well. It seems that disparities in income and expenditure patterns that are currently revealed in Tables 2 and 3 are likely to persist

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[14]More than 60 percent of housing expenditure for both rural and urban households is mainly the imputed value of owner occupied housing.

over time. Expenditure on education, which is an indicator of current investments in human capital, is twice as high for the two top urban groups relative to other groups. This indicates that the urban top income groups, who already enjoy higher levels of income, have access to the better urban infrastructure and social services, live in good neighbourhoods, drive their own cars, etc. are also investing much more in the quality education of their children. Thus possibilities of upward mobility through investments in human capital and the equalising effects of good education on class disparities are not visible for rural households or the poorest urban group. It is quite likely that current disparities would persist along the rural-urban dimension as well as across income classes in the future in Pakistan.

In short, the above analysis indicates that Pakistani households are feeling the pinch of price hikes and slow growth since the mid 1980s. They are adjusting their budgets to cope with these effects by increasing expenditures on food, fuel and housing and cutting back the allocations for discretionary expenditures such as recreation, personal effects, ceremonies and gifts.

Demand Responses

In order to gain some insights into households' response to rising prices and falling real incomes, we have derived own-price elasticity and total expenditure elasticity of demand using a Linear Expenditure System (LES).[15] The expenditure elasticity of demand could be thought of as a proxy for the elasticity of demand with respect to permanent income, especially given the non-reliability of income data. All own-price elasticity estimates are negative. Our overall results using the HIES 1996-97 correspond quite well to comparable estimates in the literature. Similar to Ahmad *et al.* and Burney *et al.* we find higher own-price and expenditure elasticity estimates in rural areas relative to urban areas, and fairly low cross price effects except for food.[16]

Table 4 and 5 show that uncompensated own price elasticity estimates for the poorest 40 percent urban and rural households have a much narrower range compared to the middle 40 percent and top 20 percent households. This indicates that the poorest households have little room to adjust to price hikes compared to other income groups. Hence, the impact of price hikes in general, and particularly for food, fuel, clothing, and housing, that devour 85 percent of the budget of the poor, is likely to have a huge impact on these households.

We find that own-price elasticity of demand for essential foods (Food1) and non-essential foods (Food2)[17] are higher for the poorest households. This implies that

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[15]The LES model was estimated using OLS. Recreation expenditure was taken as the numeraire. The model showed good fit and reasonably high R^2. The model is described in the Annex.

[16]We have not reported the cross-price effects because the cross-price elasticities were generally quite negligible.

[17]Food1 and Food2 comprise 75 percent and 25 percent, respectively, of total food expenditures by all income groups. Food1 includes items such as cereals, pulses, milk and milk products, vegetables, ghee/cooking oil, tea/coffee, sugar, etc. Food2 includes, baked and friend products, mutton, beef, chicken, eggs, fruits, beverages, and miscellaneous foods.

Table 4

Uncompensated Own Prices Elasticity of Demand—Urban

Bottom 40%		Middle 40%		Top 20%	
Fuel	−0.31	Food1	−0.38	Food1	-0.33
Footwear	−0.36	Footwear	−0.48	Clothing	-0.46
Clothing	−0.37	Fuel	−0.48	Footwear	−0.46
Medical Care	−0.38	Clothing	−0.51	Medical Care	−0.51
Personal Care	−0.46	Personal Care	−0.57	Fuel	−0.54
Food1	−0.48	Medical Care	−0.66	Education	−0.59
Education	−0.49	Others	−0.69	Personal Care	−0.65
Others	−0.53	Food2	−0.82	Food2	−0.69
Transportation	−0.54	Education	−0.91	Furniture	−1.07
Food2	−0.57	Housing	−0.93	Housing	−1.08
Housing	−0.61	Furniture	−0.93	Others	−1.15
Furniture	−0.88	Transportation	−0.99	Transportation	−1.43

Source: Estimated from HIES 1996-97.

Table 5

Uncompensated Own Prices Elasticity of Demand—Rural

Bottom 40%		Middle 40%		Top 20%	
Clothing	−0.41	Clothing	−0.55	Footwear	−0.21
Medical Care	−0.45	Medical Care	−0.63	Clothing	−0.22
Personal Care	−0.46	Personal Care	−0.63	Food1	−0.34
Fuel	−0.48	Footwear	−0.66	Personal Care	−0.35
Transportation	−0.48	Others	−0.66	Food2	−0.47
Footwear	−0.50	Food1	−0.67	Furniture	−0.75
Housing	−0.51	Fuel	−0.68	Education	−0.78
Education	−0.55	Food2	−0.74	Housing	−0.81
Others	−0.56	Transportation	−0.81	Medical Care	−0.96
Food1	−0.64	Education	−0.81	Transportation	−1.07
Food2	−0.66	Housing	−0.84	Others	−1.16
Furniture	−0.96	Furniture	−1.54	Fuel	−1.19

Source: Estimated from HIES 1996-97.

as food prices increase the poor are forced to cut back their food expenditures relatively more compared to other groups. These results indicate that in general the poor households may be experiencing extreme distress due to rising food and non-food prices during the 1990s.[18] The observation that caloric/food poverty is increasing in Pakistan in recent years is also supported by our results. These results make a very strong case for a food support programme for the poorest and most vulnerable households in Pakistan.

Demand for fuel is relatively inelastic for the poorest households compared to other groups, implying that rising fuel prices are likely to have a significant impact on poor households. However, the argument that the poor are going to bear the brunt of rising utility prices does not hold up in our analysis. Our results show that the most direct burden of rising utility prices (e.g. electricity, gas) would be borne by the upper 60 percent urban households, who are the main consumers of these energy sources. Increase in electricity prices would also affect the urban poor to a lesser extent. The poorest households are mostly affected by increase in prices of *firewood*, and these been also been rising quite rapidly in recent years.

Rising prices of fuel oil and petroleum products have posed a heavy burden on the Pakistani economy and have been attributed as an important determinant of the rising overall price levels in recent months. Our analysis shows that while the impact of increase in POL prices may be quite widespread, the most direct burden is borne by the top 20 percent urban households. Increase in prices of public road transport, often resulting from sustained increases in POL prices, has the biggest impact on the poor.

The poorest 40 percent households have a relatively low price elasticity of demand for education. Thus increase in the cost of education (particularly education fees) would have a negative impact on poor households. Interestingly, middle-income groups have the highest price elasticity of demand for education. It could well be that with rising cost of education children belonging to middle-income groups are more likely to shift from relatively higher cost/quality private schools to lower cost-quality public schools. These results suggest that provision of high quality and affordable education for the poor and middle-income groups should be a key element of the government's poverty reduction programmes.

Tables 6 and 7 show results of total expenditure elasticity of demand.[19] This could be taken as a proxy for permanent income elasticity because of habit persistence in consumption behaviour. As expected we find that expenditure elasticity of demand for essential foods (Food1) is relatively low for all income groups. Engles curve effects are also visible in the progressive reduction of the income elasticity of demand for Food1 and Food2 by higher income classes.

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[18]The cross-price elasticities with respect to Food1 (not reported here) were also quite high for the poorest 40 percent households, especially with respect to demand for furniture, ceremonies, and Food2. For the rural poor, Food1 and education also showed high cross price effects, indicating that the rural poor children are likely to drop out of school as a result of rising food prices.

[19]Our aggregate results are very similar to Ali's (1985) for 1979.

Table 6

Expenditure Elasticity of Demand—Urban

Bottom 40%		Middle 40%		Top 20%	
Food1	0.72	Food1	0.46	Food1	0.35
Fuel	0.74	Fuel	0.77	Clothing	0.55
Clothing	0.89	Footwear	0.80	Footwear	0.57
Footwear	0.94	Clothing	0.82	Medical Care	0.62
Medical Care	0.97	Personal Care	0.94	Fuel	0.65
Personal Care	1.16	Medical Care	1.11	Education	0.73
Education	1.29	Others	1.13	Personal Care	0.79
Food2	1.32	Food2	1.32	Food2	0.80
Others	1.35	Housing	1.52	Furniture	1.32
Housing	1.37	Education	1.54	Housing	1.41
Transportation	1.41	Furniture	1.59	Others	1.44
Furniture	2.37	Transportation	1.68	Transportation	1.85

Source: Estimated from HIES 1996-97.

Table 7

Expenditure Elasticity of Demand—Rural

Bottom 40%		Middle 40%		Top 20%	
Clothing	0.84	Food1	0.81	Footwear	0.37
Food1	0.89	Clothing	0.87	Clothing	0.38
Medical Care	1.00	Personal Care	1.02	Food1	0.41
Fuel	1.00	Medical Care	1.02	Personal Care	0.61
Personal Care	1.00	Others	1.06	Food2	0.74
Housing	1.01	Fuel	1.06	Furniture	1.37
Transportation	1.07	Footwear	1.07	Housing	1.39
Footwear	1.11	Food2	1.14	Education	1.42
Others	1.22	Transportation	1.31	Medical Care	1.75
Education	1.24	Education	1.33	Transportation	1.96
Food2	1.36	Housing	1.33	Others	2.18
Furniture	2.19	Furniture	2.54	Fuel	2.25

Source: Estimated from HIES 1996-97.

Only Food1 and clothing fall in the category of "necessities" for the bottom 80 percent of rural households, with expenditure elasticity of demand less than unity. The urban poor have a somewhat expanded list of "necessities", including the above two categories and also fuel, footwear and medical care. Expenditures on furniture/fixtures, transport, housing and miscellaneous others fit the description of "luxury" goods for all groups, with high expenditure elasticity of demand. However,

for the poorest urban and rural groups, expenditures on certain types of foods (Food2), education and medical care, show high expenditure demand elasticity, indicating that these are viewed as non-essential expenditures by poor households.

Except for the top 20 percent households, education seems to be a "luxury" good for most Pakistani household—its income elasticity of demand ranges between 1.24–1.54. Hence, if taking education to the poor is a goal of our poverty reduction strategy, it is not only important to lower the cost of education but also to increase income levels by generating pro-poor growth, so that poor households can afford the "luxury" of educating their children.

CONCLUSION

The paper had a very modest aim of deriving partial equilibrium estimates that would enable one to evaluate the households' demand responses. Our analysis shows that households are revealing expenditure patterns indicative of tight budget constraints being faced by them. Most Pakistani households have shifted expenditures toward basic needs and away from non-essential items over the 1987-88 – 1996-97—a period associated with rapidly increase in price levels and with very slowly rising real incomes.

Rise in food prices have a big impact on the poorest households in rural and urban areas. High own-price elasticity of demand for food combined with high expenditure allocations on food indicate that the poorest households in Pakistan are facing a distressful situation due to food price hikes. There is therefore a need to ensure that food prices do not increase rapidly, especially for those items that are staple foods for the poor. In addition, interventions are needed to compensate the poorest and vulnerable groups for increase in food prices and elimination of food subsidies. The government's newly initiated Food Support Programme and increase in "Guzara" allowance for Zakat recipients are steps in the right direction. There is a need do careful evaluations of these programmes and perhaps the scope and size of these initiatives as well as expand the purview of social safety nets for the poorest of the poor.

Our results also show that education is seen as a luxury good by a vast majority of Pakistani households. The analysis of shares, price- and income elasticity of demand for education also point toward a need for innovative interventions for providing affordable and quality education to the poor. Unless provision of education is made part of the government's poverty reduction strategy, the disparities of income and wealth are likely to persist and even exacerbate over time.

ANNEXURE

THE LINEAR EXPENDITURE SYSTEM

We assuming that all household decisions are made on per capita basis. We also assume that except for income and prices, all other factors such as age, education, occupation, do not affect consumption. For each type of households the expenditure behaviour can be described as:

$$e_i = p_i x_i = p_i \gamma_i + \beta_i (E_i - \Sigma \, p_i \gamma_i) \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (1)$$

where

$i = 1, 2, \ldots\ldots, n$ good.

$e_i =$ household expenditure on good i.

$p_i =$ price of good i.

$x_i =$ per capita consumption of good i.

$E_i =$ household total expenditure (a proxy for permanent income).

The two parameter that are estimated (γ_i, β_i) represent the subsistence quantity of good i and the marginal budget shares, respectively. $(E_i - \Sigma \, p_i \gamma_i)$ is referred to as the supernumerary expenditure.

The stochastic specification of the LES is written as:

$$e_{ih} = \alpha_i + \beta_i E_h + \varepsilon_{ih} \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (2)$$

where $h = 1, 2, \ldots\ldots, H$ households, $\alpha_i = \gamma_i^* + \beta_i \, \Sigma \, \gamma_i^*$ and ε_{ih} is the error term with the usual properties.

The model described in (2) is one of identical regressors. We have used OLS and cross equation restrictions to derive the price, cross price and income (expenditure) elasticity of demand.

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Comments

I would like to start with the paragraph where the authors state. "assuming that HIES surveys of 1987-88 and 1996-97 are fairly comparable," before they begin to start presenting the results. If they had checked with any regular users of HIES data they would have known that this assumption is not at all plausible. Why? Because the post-1991 HIES questionnaires, the primary sampling units (PSUs) for samples, sample sizes, and clusters and area coverage, were revised very significantly. Therefore to compare pre and post-1991 HIES sample is not possible unless it is made comparable. This would involve a lot of cleaning of the data and/or adjustments to the data to make them comparable. There is no reference to that affect in this paper, but the trends in the results for pre and post 1991 period say it all. Therefore, the entire analyses based on the wrong assumption of comparable data does not hold.

The authors start the paper by saying that according to the Government of Pakistan poverty in Pakistan has increased. Then they put forward the World Bank assessment whereby the preliminary estimates of World Bank show that it may not have risen but remained stagnant. However it may be noted that the panel discussion on poverty the evening before this presentation, at this forum, established beyond any doubt that poverty has increased in Pakistan. Furthermore PES (1999-2000) reports Gini-coefficients since 1963-64 to show the improvements and the worsening of distribution of income between the lowest 20 percent and the top 20 percent. These results are based on a consistent methodology and comparable groups used since the sixties. In this paper, however, Tables 2 and 3 divide the population into bottom 40 percent, middle 40 percent and top 20 percent, and then compare bottom 40 percent with top 20 percent. What a comparison? It is common sense that data must be comparable. When we compare bottom 40 percent with top 20 percent it is obvious that, of the 60 percent of the middle income group 20 percent have been added to the bottom 20 percent. So adding one-third of the middle income group to the lowest 20 percent will make it relatively better off. Hence, the income inequilities between the bottom 40 percent and top 20 percent would be lower, and poverty levels may appear to be stagnant, as implied by the World Bank.

Tables 4 and 5 compare bottom 20 percent middle 40 percent and top 20 percent, another 20 percent of the middle income group seem to have vanished in this air. However again when we read the texts, it implies bottom 40 percent. This is a very glaring omission which would not miss the attention of any one who has written it, and if not written at least cared to read it once (what we call academic courtesy) before submitting to this forum. This confusion continues in Tables 6 and

7 where once again 40 percent poor are compared with the 20 percent of the richest population. First the data set is uncomaprable, then the income classes are incomparable one wonders what's going on?

The authors refer to five very comprehensive studies on the subject. Now except for the new data set of 1996-97, which itself is not comparable, what is new or special about this study? In fact by avoiding reasonable disaggregation of food items as is done in all those studies, they project their study to be superior to previous studies because they get different results. If one looks at the indepth analysis of the most important subgroup-food in these studies, it is not at all difficult to see that this analysis is very superficial compared to those studies.

The contradictions in the paper are also very striking. On page 8 it is concluded that all income groups are adjusting their budgets to cope with the effects of rising prices by increasing expenditure on food, fuel and housing and cutting other non-essential expenditure. However on page 10 it is concluded that as food prices increase the poor are forced to cut their food expenditures relatively more compared to other groups. Implying the others were doing the same to a lesser extend. Which statement to take?

On page 10 it is very difficult to accept the argument that poor did not feel the brunt of utility prices increases I am sure policy-makers would be pleased to hear this. The fact remains that both electricity and gas are inputs to flour mills, petrol is input to all goods transported from point of production to the market. Electricity prices have been followed by increase of flour prices. Gas price increases have raised the price of gas tandoor rotis in all markets of Islamabad, which is the major purchase item of poor resources away from their homes.

Furthermore the poor, both rural and urban use kerosine oil, prices of kerosine oil have been increasing quite rapidly. The official argument offered is, "to avoid mixing it with diesel". However, the government would never want to know, or knowingly not acknowledge, that it is a relatively convenient and cheap fuel in urban as well as in rural areas. Findings of studies like these would be comforting to the government, but hurting to the poor.

Similarly it is not correct to say the increase in price of electricity would not affect the poor. Due to the rapid rate of village electrification almost all the urban slums and a very large number of villages are receiving electricity connections very rapidly. What do they take these connections for? — to benefit from the use of it obviously. Therefore a rise in its price affects them directly. The matter of fact is that even if we do not use electricity all, we have to pay a minimum amount equivalent to the kilowatt load of the meter installed. For 12 kilowatt load the minimum charges are Rs 280 per month, and for the minimum 5 kilowatt load the charges are Rs 100 per month, whether we use/consume the electricity or not.

In case we do it is adjusted against the units consumed if the consumption is above Rs 275 or Rs 100.[1] Otherwise one must pay these minimum rates in any case. The authors rightly put in the last para on page 10 that increase in fare prices due to increase in petrol price affect the poor most; and they are absolutely right to suggest that this increase must to be evaluated. But they must acknowledge that the same argument applies to the rise in the prices of kerosene oil, gas and electricity.

It is unfortunate that an uncomaparable data set has been used to put forward such misleading findings. One must be careful in making sweeping statements based of faulty evidence, because they affect the lives of the most disadvantaged groups.

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[1]*Source:* Billing Section, Revenue Office, WAPDA, G-7, Islamabad.