Is Consumption Pattern Homogeneous in Pakistan? Evidence from PSLM 2007-08

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I. INTRODUCTION

The analysis and examination of household consumption patterns made possible by the pioneering work of Ernest Engel, in the form of the Engel curve,[1] is a critical element for the formulation of various aspects of economic policy. This information is essential for macroeconomic planning purposes, as accurate projections of demand for various commodities are critical for efficient allocation of scarce productive resources across the different sectors of the economy. Knowledge of consumer behavior is also important for evaluating the impact of tax proposals on household welfare, as taxes imposed on commodities having an income elasticity greater than one are likely to effect rich households, while taxing necessities (with elasticity below one) will have a disproportionately adverse effect on low income households.

A vast empirical literature has examined household consumption patterns, using the Engel curve framework for both the developed and developing countries. Noteworthy studies in this regard include Stigler (1954), Houthakker (1957), Giles and Hampton (1985) and Tansel (1986). In case of Pakistan, household consumption patterns have been analysed by a large number of studies, which includes Ranis (1961), Rahman (1963), Bussink (1970), Ali (1981), Malik (1982), Cheema and Malik (1985), Malik and Ahmad (1985), Ahmed and Ludhow (1987), Alderman (1988), Burney and Khan (1991, 1992) and more recently Shamim and Ahmad (2007) and Ahmad and Arshad (2007). The major limitation of the existing literature, apart from being based mainly on datasets which are over two decades old, is that the household consumption patterns have been analysed only for Pakistan as a whole or by its urban-rural regions. To our knowledge, no study has examined the consumption behavior of households across the four provinces of the country.

A provincial level analysis of household budgets is necessary as the socio-economic and cultural conditions differ considerably across the federating units of the country, which is likely to give rise to heterogeneous consumption patterns across the

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[1]The Engel curve shows the relationship between a household's expenditure on a particular good and total household income, holding prices constant.

four provinces. A provincial analysis of household budgets has taken on an increased importance in the post 18th Amendment period, with more responsibilities being devolved to provinces. This increased level of decentralisation is also likely to have major consequences for macro-economic management in the country. The present study will attempt to empirically test for the homogeneity of household consumption patterns across the provinces of the country as well as explore the urban-rural variations within each province. The paper will estimate marginal expenditure shares and expenditure elasticities at the provincial level as well as by urban/rural areas, using recent household level micro data from PSLM 2007-08. The study would make use of the 12 broad commodity groupings employed by Burney and Khan (1991),[2] to examine the inter-provincial and intra-provincial differences in consumption behaviour.

Another objective of this study is to look at the role of remittances in determining the level and distribution of household expenditures across the four provinces, with respect to the 12 expenditure groups. With remittances emerging as a major source of liquidity to recipient households in recent years, it would be worthwhile to examine how the inflow of remittances has changed consumption of those households who are receiving them versus households not receiving them and how the impact differs across provinces.

The layout of the paper is as follows: Section II presents the methodology and theoretical framework used in the analysis, while Section III discusses the data. Results are reported and discussed in Section IV and the impact of remittances on provincial consumption patterns is examined in Section V. The final section ends the paper with some concluding remarks.

II. THEORETICAL FRAMEWORK

The Engel curve is a demand function derived from a constrained utility maximisation problem, which can be specified as follows:

$$x_i = a_i + b_i(p_j/p_i) + c_i(Y/p_i) + e_i \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \quad (1)$$

where x_i is the demand for commodity i, p_j/p_i represents the relative price ratio , Y/p_i is the real income and e_i is the random error term. Consequently, the relationship between expenditure on commodity i and income can be derived as:

$$p_i x_i = a_i p_i + b_i p_j + c_i Y + e_i p_i \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \quad (2)$$

Empirical studies on household consumption patterns, which are mainly based on single year cross section data, generally assume that all the sample households face the same prices for every commodity. There is however evidence to suggest that this assumption is not likely to be true.[3] This stems from the fact that household income and expenditure surveys typically collect data from clusters of households that live in the same village or urban block. Market prices within a cluster are likely to be same, but may differ across clusters due to a variety of reasons. As household budget surveys do not collect information on market prices, it is difficult to account for price variations on household consumption patterns, using such datasets.

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[2] The study used micro data from the 1984-85 round of the Household Income and Expenditure Survey (HIES).

[3] For example, see, Alderman (1986), Deaton (1988, 1997) and Behrman and Deolalikar (1990).

If we assume that all households face the same price for every commodity, then equation (2) can be expressed as:

$$E_i = \alpha_i + \beta_i Y + u_i \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

Where $E_i = p_i \ x_i$; $\alpha_i = a_i \ p_i + b_i \ p_j$; $\beta_i = c_i$ and $u_i = e_i \ p_i$. Equation (3) is the exact representation of the Engel curve, which expresses the relationship between the households' expenditure on commodity i (E_i) and income Y.

As the Engel curve is derived from constrained maximisation, it has to meet the general restrictions of demand theory. Since prices are assumed to be the same across households when using cross section data, the restrictions in terms of price derivatives such as homogeneity, symmetry and negativity of own price effect cannot be tested. This leaves only the 'adding up' condition to be tested, which in terms of the parameters of eq. (3) implies that α_i and β_i must sum to zero and unity, respectively; i.e., $\sum \alpha_i = 0$ and $\sum \beta_i = 1$.

An implicit assumption of this study is that all the households have the same utility function. This is however a rather strong assumption because preference ordering can vary from one income group to another and may even change from one family to another. This is likely to introduce bias in the estimated parameters if similar households have different expenditure patterns.

The choice of an appropriate functional from is also an important issue in deriving the Engel curve and has been the subject of many empirical studies. Various functional forms have been used in the literature, but consensus on the most appropriate form has not been developed. The different functional forms used include linear, semi-logarithmic, double logarithmic, etc. In this study, we make use of the linear and double-logarithmic forms which have also been used by Burney and Khan (1991), in their earlier analysis of household consumption patterns by the urban/ rural sectors of the country.

Empirical work on the examination of household consumption patterns has generally used household income and/or consumption expenditure as the explanatory variables. The total household consumption expenditure is a preferred indicator of household welfare over household income, because income data have a higher likelihood of suffering from measurement errors and may also include a transitory component. Moreover, household income in rural sectors of developing countries like Pakistan are vulnerable to large fluctuations due to seasonal patterns of cropping as well as the unpredictability of agricultural activities. In view of the shortcomings of using income, this study would make use of household consumption expenditure as the explanatory variable in the Engel curve equation. Moreover, we would also use the household size as an explanatory variable to capture the effect of economies of scale in consumption in large households, which Houthakker (1957) has referred to as a combination of two effects – the specific effect and the income effect.

III. DATA

The study is based on the micro data tapes of the Pakistan Social and Living Standards Measurement Survey (PSLM) 2007-08 conducted by the Federal Bureau of Statistics. This nationally representative survey consists of data on a sample of 15,512 households. Out of this sample, observations for 4 households having household size greater than 34 were dropped from analysis. Thus, the analysis carried out in this paper is based on a sample of 15,508 households across the four provinces of Pakistan, the distribution of which is reported in Table 1.

Table 1

Distribution of Sample Size, by Province and Sector

Sectors	Punjab	Sindh	KPK	Balochistan	Total
Overall	6636	3765	2934	2173	15508
Urban	2768	1672	1048	765	6253
Rural	3868	2093	1886	1408	9255

The examination of household consumption patterns is carried out for the 12 commodity groupings used by Burney and Khan (1991). These consumption categories include food and drinks, clothing and footwear, fuel and lighting, housing, transport and communications, household effects, personal effects, health care, education, entertainment, durables and miscellaneous items. The details of commodities covered within each of the 12 groups are given in Appendix 1.

The survey data contains information on both the amount spent on purchase of a particular commodity as well as its imputed value in case it is self-produced and/ or received as gift in kind. For the purpose of this study, we group together both these two sets of information to get the total expenditure on each commodity, which is the amount spent on buying that commodity plus its imputed value.

In the second part of the paper, where the impact of remittances on provincial consumption patterns is examined, a total sample of 2,383 households is observed to be receiving remittances. Out of this sample, 76 observations with missing values for the remittance variable are dropped from analysis, while one outlier[4] observation is also deleted, which leaves a total sample of 2,306 households receiving remittances across the four provinces of Pakistan. For the purpose of our analysis, remittances are defined to include both the foreign remittances sent by migrant family members from outside Pakistan as well as the domestic remittances sent from within Pakistan during the year 2007-08. The sample of households not receiving remittances comes to a total of 13,125 observations.

The average household monthly consumption expenditures across the four provinces of Pakistan along with their urban-rural breakup, given in Table 2 shows that mean expenditures are highest in KPK (Rs 14,350 per month), followed by Punjab and Sindh. Average household expenditures are observed to be the lowest for the province of Balochistan, at Rs 11,392 per month. These provincial averages, however, hide substantial intra-provincial variations *vis a vis* the urban-rural sectors, with this variation being the highest for Sindh. Monthly consumption expenditures of households in rural Sindh (Rs 9,851) are 42 percent lower than those of their counterparts in the more developed urban centers (Rs 17,074), comprising mainly metropolitan Karachi, which is the hub of economic activity of the entire country. Following Sindh, the ratio of urban to rural expenditures are seen to be the highest for Punjab at 1.49 and Balochistan at 1.35, while this ratio is lowest for KPK, where the monthly consumption expenditures of urban households are 1.28 times higher than those of their rural counterparts.

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[4] This includes one household that reported receiving Rs. 10 million as remittance during the reference year.

Table 2

Average Monthly Household Consumption Expenditure (Rs), by Province and Sector

Sectors	Punjab	Sindh	KPK	Balochistan
Overall	14221.87	13058.81	14350.59	11391.56
Urban	17602.64	17074.68	16709.21	13672.59
Rural	11802.54	9850.711	13039.96	10152.22

The average household expenditure shares of the 12 groups of commodities for the whole sample are reported in Table 3a for all four provinces, while the urban-rural breakdown within each province is given in Table 3b. In order to test for statistical significance between the expenditures shares for urban-rural sectors within each province, Table 3b also presents results for the two sample t-test with equal variance. Overall, expenditures on food and drinks account for the highest share of total household consumption expenditures across all provinces, ranging from a low of 45.25 percent for Punjab to a high of 55.25 percent for Balochistan. Moreover, rural households across all four provinces are observed to be spending considerably more on this expenditure category compared to their urban counterparts, with the urban-rural disparity being the highest for Balochistan at close to 12 percentage points. The urban-rural difference is statistically significant for the food and drinks category in all four provinces.

Following food and drinks, housing is found to be receiving the highest share of total consumption expenditure across all provinces, followed by miscellaneous items in Punjab and Sindh and fuel and lighting in KPK and Balochistan. Within the housing category, the expenditure shares across urban and rural areas of all provinces differ significantly, with urban households spending proportionately much more on housing than their rural counterparts. This variation is highest in the province of Sindh, where rural households allocate 10.3 percent of their budget on housing compared to double that proportion for their urban counterparts at 20.8 percent.

Table 3a

Average Expenditure Shares for Different Commodity Groups, by Province (Overall)

Commodity Groups	Punjab	Sindh	KPK	Balochistan
Food and drinks	45.25	48.12	48.78	55.25
Clothing and Footwear	5.97	4.97	5.97	4.21
Fuel and Lighting	8.35	6.26	9.30	9.03
Housing	14.02	14.96	9.60	11.30
Transport and Communications	4.96	7.43	4.52	5.88
Household Effects	0.68	0.48	0.76	0.41
Personal Effects	3.79	3.83	2.97	3.14
Healthcare	3.38	3.31	5.05	2.22
Education	2.98	2.03	3.41	1.41
Entertainment	0.60	0.67	0.29	0.47
Durables	1.23	0.25	0.60	0.08
Miscellaneous	8.79	7.69	8.75	6.61

Table 3b

Average Expenditure Shares for Different Commodity Groups, by Province (Urban-Rural)

	Punjab			Sindh			KPK			Balochistan		
	Urban	Rural	T-test	Urban	Rural	T-test	Urban	Rural	T-test	Urban	Rural	T-test
Food and drinks	39.75	49. 19	−32.04*	41.69	53.26	−35.83*	44.49	51.17	−15.45*	47.49	59.46	−26.91*
Clothing and Footwear	5.61	6.23	−9.61*	4.26	5.54	−22.12*	5.6	6.18	−6.73*	4.03	4.3	−3.64*
Fuel and Lighting	7.79	8.75	−9.69*	6.41	6.14	3.00*	8.15	9.94	−11.05*	8.08	9.54	7.72*
Housing	19.34	10.21	43.20*	20.75	10.34	36.07*	14.77	6.72	27.16*	17.73	7.81	29.34*
Transport and Communications	5.38	4.66	5.88*	6.98	7.79	−4.77*	4.66	4.45	1.36	6.07	5.77	1.49
Household Effects	0.65	0.71	−1.41	0.55	0.41	5.13*	0.66	0.81	−2.14*	0.41	0.4	0.55
Personal Effects	3.82	3.77	1.45	4.03	3.66	8.19*	3.03	2.94	1.50	3.31	3.04	4.12*
Healthcare	2.99	3.66	−5.61*	2.72	3.79	−12.38*	4.24	5.5	−6.30*	2.06	2.31	−2.94*
Education	4.19	2.11	17.95*	3.4	0.93	22.38*	4.96	2.54	11.83*	2.39	0.89	14.90*
Entertainment	0.91	0.38	16.13*	1.17	0.27	27.40*	0.51	0.17	8.56*	0.96	0.2	20.15*
Durables	1.20	1.26	−0.52	0.28	0.22	0.81	0.73	0.53	1.33	0.05	0.1	−0.61
Miscellaneous	8.36	9.1	−4.46*	7.75	7.64	0.80	8.2	9.05	−3.06*	7.41	6.17	7.47*

* Significant at 5 percent level of significance.

Table 3b

In terms of the remaining 9 commodity groups, rural households across all 4 provinces are seen to be spending proportionately and significantly more on clothing and footwear and health care; while urban households spend proportionately and significantly more on education and entertainment. In case of durables, the average expenditure shares are not statistically different between the urban and rural sectors of all four provinces.

IV. RESULTS

The results of the empirical analysis of household consumption patterns across the four provinces of Pakistan, as well as by their urban and rural areas, are presented and discussed in this section. The Engel curves have been estimated using both the linear and double log functional forms, employing the Ordinary Least Squares (OLS) method. The estimated marginal expenditure shares for the 12 commodity groups are reported in Table 4 for all provinces along with their disaggregation by urban and rural sectors.

Table 4

Marginal Expenditure Shares for Different Commodity Groups, by Province and Sector

Commodity Groups	Sectors	Punjab	Sindh	KPK	Balochistan
Food and drinks	Overall	0.184	0.212	0.165	0.329
	Urban	0.183	0.201	0.164	0.289
	Rural	0.193	0.353	0.168	0.444
Clothing and Footwear	Overall	0.037	0.020	0.031	0.021
	Urban	0.031	0.019	0.028	0.017
	Rural	0.046	0.038	0.037	0.025
Fuel and lighting	Overall	0.049	0.044	0.033	0.049
	Urban	0.056	0.041	0.034	0.036
	Rural	0.038	0.054	0.037	0.074
Housing	Overall	0.194	0.336	0.204	0.221
	Urban	0.256	0.354	0.248	0.291
	Rural	0.066	0.079	0.099	0.051
Transport and Communications	Overall	0.098	0.084	0.088	0.109
	Urban	0.098	0.081	0.090	0.113
	Rural	0.099	0.144	0.087	0.106
Household effects	Overall	0.027	0.011	0.020	0.009
	Urban	0.015	0.011	0.015	0.009
	Rural	0.047	0.011	0.031	0.007
Personal effects	Overall	0.029	0.040	0.015	0.037
	Urban	0.033	0.041	0.015	0.045
	Rural	0.020	0.028	0.013	0.021
Healthcare	Overall	0.022	0.019	0.040	0.027
	Urban	0.019	0.019	0.044	0.024
	Rural	0.028	0.029	0.039	0.035
Education	Overall	0.076	0.080	0.124	0.064
	Urban	0.089	0.082	0.136	0.078
	Rural	0.048	0.038	0.086	0.019
Entertainment	Overall	0.011	0.019	0.006	0.011
	Urban	0.011	0.020	0.006	0.009
	Rural	0.011	0.014	0.005	0.015
Durables	Overall	0.230	0.089	0.287	0.238
	Urban	0.156	0.061	0.293	-0.002*
	Rural	0.308	0.475	0.294	0.669
Miscellaneous	Overall	0.159	0.133	0.186	0.092
	Urban	0.152	0.139	0.128	0.084
	Rural	0.181	0.126	0.303	0.101

*Estimation based on a sample of 47 households.

There is observed to be considerable variation across the four provinces; marginal expenditure shares of households in Punjab and KPK are highest on durables (23 percent and 29 percent, respectively) followed by housing. Households in Sindh tend to spend marginally the highest on housing at 34 percent, followed by food and drinks (21 percent) and miscellaneous items (13 percent). In Balochistan, the highest marginal spending of households goes on foods and drinks at 33 percent, which is followed by durables and housing, at 24 percent and 22 percent, respectively. On the other hand, the marginal expenditure shares of households in Punjab and KPK are the lowest for entertainment, which is followed by healthcare in Punjab and personal effects in KPK and household effects for both provinces. Households in Sindh and Balochistan spend lowest at the margin on household effects. This is followed by marginal expenditures on entertainment and clothing and footwear.

This provincial overview of marginal expenditure shares, however, masks considerable variations in consumption patterns across the urban and rural sectors of the provinces. The marginal propensity to spend of the rural households in all provinces is substantially higher for food and drinks, particularly in case of Sindh and Balochistan, where rural households spend 35 percent and 44.4 percent more at the margin, respectively, compared to 20 percent and 29 percent for their urban counterparts. Moreover, rural households in all four provinces tend to spend more at the margin on clothing and footwear and durables, while urban households have higher marginal expenditure shares for education.

The analysis of expenditure elasticities, reported in Table 5 shows that for all four provinces; housing, transport and communications, education, household effects, durables and miscellaneous items are luxury goods, with expenditure elasticities exceeding unity, while entertainment is also a luxury in all provinces except Sindh. Of the remaining five expenditure categories—food and drinks, clothing and footwear, fuel and lighting and personal effects can be classified as necessities across all provinces, while healthcare is a necessity in all provinces except Balochistan.

The urban-rural breakup of the expenditure elasticities show some exception to the overall trends observed for each province above. For instance, personal effects are seen to be a luxury good in rural Sindh, while education is a necessity only in rural Balochistan, contrary to trends observed for the remaining provinces as well as their urban-rural disaggregates. In case of urban Punjab and urban Balochistan, durables come across as necessities.

The preceding discussion clearly highlights that the household consumption patterns across the four provinces of the country are far from being homogeneous. Considerable variation can be observed not only across provinces but also among the urban-rural areas within a province, in terms of the mean household budget shares, the marginal expenditure shares and expenditure elasticities of the 12 expenditure groups analysed. This confirms our original hypothesis that consumption patterns are likely to diverge across provinces, due to the different socio-economic and cultural conditions prevailing in each province.

Table 5

Expenditure Elasticities for Different Commodity Groups, by Province and Sector

Commodity Groups	Sectors	Punjab	Sindh	KPK	Balochistan
Food and Drinks	Overall	0.648	0.618	0.590	0.749
	Urban	0.645	0.622	0.582	0.741
	Rural	0.713	0.765	0.627	0.891
Clothing and Footwear	Overall	0.779	0.612	0.780	0.575
	Urban	0.786	0.615	0.721	0.539
	Rural	0.781	0.858	0.855	0.557
Fuel and Lighting	Overall	0.699	0.875	0.528	0.712
	Urban	0.691	0.809	0.511	0.620
	Rural	0.727	0.950	0.608	0.832
Housing	Overall	1.307	1.371	1.442	1.257
	Urban	1.217	1.225	1.353	1.241
	Rural	1.015	0.916	1.142	0.548
Transport and Communications	Overall	1.512	1.185	1.220	1.771
	Urban	1.564	1.178	1.305	1.751
	Rural	1.503	1.652	1.156	1.927
Household Effects	Overall	1.184	1.151	1.122	1.498
	Urban	1.188	1.303	1.107	1.570
	Rural	1.228	1.510	1.150	1.554
Personal Effects	Overall	0.751	0.946	0.740	0.978
	Urban	0.777	0.926	0.694	1.142
	Rural	0.651	0.838	0.740	0.793
Healthcare	Overall	0.770	0.596	0.841	1.342
	Urban	0.772	0.720	0.885	1.245
	Rural	0.857	0.864	0.950	1.590
Education	Overall	1.716	1.869	1.839	1.463
	Urban	1.563	1.517	1.623	1.697
	Rural	1.630	1.757	1.852	0.846
Entertainment	Overall	1.205	0.816	1.232	0.865
	Urban	0.961	0.822	0.718	0.641
	Rural	1.323	0.727	1.426	1.263
Durables	Overall	1.444	1.043	1.742	1.037
	Urban	1.462	0.894	1.956	0.265
	Rural	1.615	2.558	1.760	2.089
Miscellaneous	Overall	1.471	1.276	1.510	1.333
	Urban	1.511	1.402	1.494	1.174
	Rural	1.556	1.317	1.601	1.393

V. REMITTANCES AND PROVINCIAL HOUSEHOLD CONSUMPTION PATTERNS

The preceding section has provided recent empirical evidence on the household consumption patterns for the provinces of Pakistan as well as analysed it by urban and rural sectors within each province, using household survey data for 2007-08. This section will build on the previous analysis by examining the impact of remittances on household consumption patterns for the four provinces.[5] This will involve computing the average

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[5]A disaggregation of this analysis by urban/ rural sectors within each province is not feasible as the sample of households receiving remittances in Sindh and Balochistan is very small.

expenditure shares, marginal expenditure shares and expenditure elasticities for households receiving remittances as well as those households which are non-recipients of remittances, across all the four provinces. The consumption patterns of both these two set of households will then be compared to see how remittances have affected the consumption decisions of households who are recipients of remittances with those households that are not receiving remittances.

Previously, Malik and Sarwar (1993) have examined differences in consumption patterns between remittance recipient and non-recipient households, using data from the 1987-88 round of the HIES. They estimated the Engel curves for three expenditure groups—consumption expenditure, durable expenditure and total expenditures and tested for the differences in consumption patterns of households, for overall Pakistan, its four provinces and their urban/ rural areas. Their results show that the average expenditure shares of households receiving domestic and/or foreign remittances in Punjab and Sindh are significantly different for all three expenditure groups from their counterparts not receiving remittances; while in case of Balochistan the expenditure functions are dissimilar only for expenditures on durables.

In terms of marginal expenditures, they found that both the domestic migrant households and international migrant households in Punjab, Sindh and Balochistan have higher spending at the margin with respect to total expenditures and consumption expenditures compared to non-migrant households, although this pattern varies across the urban-rural sectors of different provinces. Households receiving foreign remittances in Sindh, KPK and rural Punjab were seen to have higher marginal expenditures for the durable expenditure group, across both the urban and rural sectors, compared to households receiving no remittances and/ or domestic remittances.

Most recently, Ahmed, *et al.* (2010) conducted a micro-econometric analysis to examine the difference between the consumption behavior of households receiving remittances and those not receiving them, using data from Pakistan Social and Living Standards Measurement Survey 2005-06. Their analysis, however, was carried out only for Pakistan along with its urban-rural disaggregation, although the study did estimate the share of foreign remittances in household monthly income by province. Foreign remittances were estimated to contribute, on average, 5.1 percent, 0.7 percent, 9.4 percent and 1.6 percent to the income of households in Punjab, Sindh, KPK and Baluchistan, respectively.

We start off our analysis by presenting some basic data on households receiving remittances in Table 6. The figures show that the highest number of households receiving remittances is residing in the province of Punjab—representing around 56 percent of the sample. This is followed by KPK, where 902 households are getting domestic and/ or foreign remittances, while the sample of households receiving remittances in Sindh and Balochistan is quite small at 52 and 21 observations, respectively. The regional breakup of the sample within each province shows that in Punjab and KPK, the majority of remittances are received by rural households (65 percent and 74 percent, respectively). In case of Sindh, almost 66 percent of the remittance recipient households are located in the urban areas.

Table 6

Basic Facts about Remittances, by Province and Sector

	Sectors	Punjab	Sindh	KPK	Balochistan
No. of HHs Receiving Remittances	Overall	1281	79	902	44
	Urban	446	52	230	21
	Rural	835	27	672	23
% of HHs Receiving Remittances	Overall	19.41	2.10	30.89	2.04
	Urban	16.20	3.12	22.07	2.80
	Rural	21.71	1.29	35.78	1.64
Average Remittance (Rs per Year)	Overall	100562.1	89612.66	100365.9	126295.5
	Urban	129450.2	112007.7	108193	140047.6
	Rural	85132.1	46481.48	97686.9	113739.1

The proportion of total households receiving remittances is observed to be the highest in KPK, where nearly 31 percent of all households received remittances in 2007-08, with this proportion being much higher for the rural sector of the province at 36 percent. In Punjab, over 19 percent of the households were getting remittances, with this proportion being 16 percent and 22 percent, respectively, in the urban and rural sectors of the province. The share of households receiving remittances is the lowest in Balochistan and Sindh, at around 2 percent.

In terms of the size of the average remittance per year, this figure is seen to be the highest for Balochistan, where households on average got Rs. 126,296 per year in transfers in the form of domestic and/or foreign remittances. The lowest level of mean remittances is observed for KPK at Rs 89,613 per annum. There is, moreover, a large urban-rural disparity in the average remittances across all four provinces, which is most pronounced in Sindh with the average remittance of urban households being 2.4 times that of their rural counterparts.

In order to determine the impact of remittances on household consumption patterns across the 4 provinces of the country, we estimate in double log form the Engel curves for each of our 12 expenditure groups, using the full sample of households used in section I, for each province.[6] A dummy variable which takes the value one if the household is receiving domestic and/ or foreign remittances is included as an explanatory variable in this analysis. The results of this model are presented in Table 7, which shows the intercept and the coefficients for total household consumption expenditure, household size and the remittance dummy and also includes the adjusted R-squared statistic to show goodness of fit. It can be seen that the remittance dummy is statistically insignificant for durables across all 4 provinces; while for the expenditures groups—personal effects and entertainment, it is insignificant across a combination of three provinces. For the remaining expenditure categories, the remittance dummy is significant across all four provinces for food and drinks and transport and communications, while for clothing and footwear, housing and household effects, it is statistically significant across a combination of three provinces.

[6] This estimation is carried out for a sample of 15,431 households, after dropping 76 missing values and an outlier value for the remittance variable.

Table 7

Estimation of the Effect of Remittances on Household Consumption Patterns, by Province

Commodity Groups	Provinces	Intercept	Consumption Expenditure	HH Size	Remittance Dummy	Adj R squared
Food and Drinks	Punjab	2.033	0.649	0.234	–0.017	0.772
	Sindh	2.367	0.619	0.228	–0.048	0.785
	KPK	2.600	0.588	0.269	0.031	0.799
	Balochistan	1.398	0.750	0.146	0.003	0.791
Clothing and Footwear	Punjab	–1.377	0.775	0.312	0.057	0.612
	Sindh	–0.162	0.611	0.385	–0.025*	0.580
	KPK	–1.322	0.769	0.294	0.112	0.626
	Balochistan	0.316	0.572	0.190	0.133	0.432
Fuel and Lighting	Punjab	0.035	0.696	0.110	0.057	0.500
	Sindh	–1.757	0.876	0.021*	–0.015*	0.497
	KPK	1.617	0.523	0.187	0.081	0.417
	Balochistan	–0.037	0.717	0.066	–0.084*	0.355
Housing	Punjab	–4.347	1.314	–0.448	–0.077	0.515
	Sindh	–4.600	1.370	–0.513	0.133	0.655
	KPK	–5.986	1.450	–0.503	–0.084	0.354
	Balochistan	–4.332	1.258	–0.294	0.247*	0.289
Transport and Communication	Punjab	–7.357	1.518	–0.445	–0.160	0.501
	Sindh	–4.316	1.186	–0.127	–0.289	0.554
	KPK	–5.017	1.231	–0.227	–0.143	0.454
	Balochistan	–9.544	1.775	–0.346	–0.471	0.575
Household Effect	Punjab	–6.696	1.174	–0.124	0.119	0.251
	Sindh	–7.069	1.133	0.258	0.614	0.260
	KPK	–6.500	1.110	0.119*	0.129*	0.196
	Balochistan	–9.276	1.481	–0.303	0.288*	0.356

Continued—

Table 7—(*Continued*)

Personal Effects	Punjab
	Sindh
	KPK
	Balochistan
Healthcare	Punjab
	Sindh
	KPK
	Balochistan
Education	Punjab
	Sindh
	KPK
	Balochistan
Entertainment	Punjab
	Sindh
	KPK
	Balochistan
Durables	Punjab
	Sindh
	KPK
	Balochistan
Miscellaneous	Punjab
	Sindh
	KPK
	Balochistan

*Not significant at 5 percent level of significance.

−1.325	0.750	0.175	0.001*	0.623
−2.822	0.947	−0.006*	−0.058*	0.683
−1.372	0.741	0.103	−0.013*	0.525
−3.150	0.974	−0.089	0.131	0.512
−1.885	0.763	0.097	0.135	0.207
−0.333	0.592	0.256	0.178	0.228
−1.997	0.836	0.102	0.050*	0.275
−6.967	1.352	−0.149	−0.232	0.489
−9.765	1.718	−0.416	0.120	0.433
−11.364	1.867	−0.465	0.439	0.382
−10.383	1.836	−0.609	−0.022*	0.378
−8.339	1.457	−0.082*	−0.085*	0.333
−5.465	1.206	−0.735	−0.095*	0.298
−2.179	0.817	−0.192	−0.047*	0.367
−6.602	1.251	−0.569	−0.287	0.191
−2.472	0.867	−0.252	0.113*	0.241
−8.485	1.437	−0.244	0.076*	0.183
−6.711	1.050	0.639	−0.889*	0.170
−11.011	1.752	−0.636	−0.026*	0.241
−7.544	1.205	−0.234*	−1.382*	0.113
−7.110	1.465	0.029*	0.099	0.573
−5.855	1.277	0.302	−0.034*	0.573
−7.779	1.494	0.192	0.162	0.569
−5.993	1.327	0.429*	0.128*	0.500

Table 7

Table 7

As the remittance dummy is found to be statistically significant for most the expenditure groups across provinces, we proceed to further extend our analysis by computing separately the average expenditure shares, marginal expenditure shares and expenditure elasticities for the sample of households receiving remittances and the sample of households not receiving remittances. The linear and double log functional forms of the Engel curves have been estimated for both set of households. The average expenditure shares, marginal expenditure shares and expenditure elasticities for both set of households—those receiving remittances and those not getting remittances, are reported side by side in Tables 8 through 10.

A comparison of the average expenditure shares of households receiving remittances with those not receiving remittances shows differential impact of remittances across provinces and commodity groups (Table 8). This table also presents the results of the two sample t-test to test for the significance of the difference in budget shares between remittance recipient and non-recipient households within each province. Across all four provinces, average expenditure shares of households receiving remittances are observed to be significantly lower on transport and communication and food and drinks except Balochistan compared to their counterparts not receiving remittances, with this gap being highest in Sindh (over 6 percentage points). Another noteworthy finding is the higher budgetary shares of households receiving remittances on education and household effects. The finding for education is, however, statistically not significant for Balochistan.

In case of housing, remittance recipient households in Sindh have a significantly higher budget share compared to non-remittance recipient households (22.5 percent vs. 14.8 percent), while their counterparts in KPK spend significantly less on this category. Remittance recipient households in Sindh have a significantly lower average expenditure share on clothing and footwear category, while their counterparts in KPK have a significantly higher budget share on this expenditure group. In case of durables, no statistically significant difference is observed between the expenditure shares of remittance recipient and non-recipient households across all four provinces of the country, contrary to *a priori* expectation that households receiving remittances tend to spend more on durable goods.

In terms of the marginal expenditure shares, households getting remittances have a lower spending at the margin on food & drinks in all provinces (Table 9). In case of fuel and lighting, marginal expenditure shares of remittance recipient households in all provinces except KPK are lower than those for their counterparts not receiving remittances. On the other hand, households receiving remittances spend more at the margin on education in all provinces, especially Balochistan, in comparison to non-recipient households. For the other commodity groups, mixed trends can be observed for remittance recipient and non-recipient households across different provinces.

The analysis of the expenditure elasticities of households receiving remittances and those not receiving them (Tables 10), does not show any significant differences across both these categories of households. For both set of households across all four provinces; food and drinks, clothing and footwear and fuel and lighting are necessities, i.e., a one percent increase in total consumption expenditures results in an increase of less than one percent in the spending on these expenditure categories. Of the remaining expenditure categories; housing, transport and communications, education and miscellaneous items can be classified as luxury goods for both types of households,

Table 8

Average Expenditure Shares (With/ Without Remittances), by Province

	Punjab			Sindh			KPK			Balochistan		
	R	WR	T-test	R	WR	T-test	R	WR	T-test	R	WR	T-test
Food and Drinks	43.54	45.65	−5.34*	41.86	48.26	−4.95*	48.26	49	−1.57*	53.8	55.36	−0.9
Clothing and Footwear	6.03	5.96	0.84	4.06	4.99	−4.37*	6.27	5.83	4.98*	4.55	4.2	1.36
Fuel and Lighting	8.57	8.28	2.30*	6.42	6.26	0.5	9.4	9.24	0.92	7.97	9.07	−1.69
Housing	13.9	14.06	−0.56	22.5	14.8	6.67*	8.78	9.97	−3.47*	12.98	11.2	1.32
Transport and Communications	4.62	5.04	−2.73*	5.97	7.47	−2.54*	4.13	4.7	−3.58*	4.33	5.88	−2.33*
Household Effects	0.84	0.65	4.10*	0.92	0.47	4.73*	0.9	0.7	2.78*	0.66	0.4	3.45*
Personal Effects	3.74	3.8	−1.24	3.69	3.83	−0.88	2.87	3.02	−2.49*	3.57	3.13	2.04*
Healthcare	3.82	3.28	3.58*	3.63	3.31	1.03	4.86	5.15	−1.38*	1.77	2.24	−1.61
Education	3.59	2.83	5.11*	2.84	2	2.07*	3.86	3.21	2.99*	1.7	1.4	0.84
Entertainment	0.6	0.6	0.07	0.84	0.67	1.44	0.22	0.32	−2.35*	0.51	0.46	0.41
Durables	1.33	1.2	0.81	0.01	0.25	−0.85	0.53	0.64	−0.71	0.01	0.08	−0.28
Miscellaneous	9.43	8.64	3.83*	7.27	7.7	−0.9	9.92	8.23	5.91	8.15	6.58	2.74*

R: With remittance.
WR: Without remittance.
* Significant at 5 percent level of significance.

Table 8

Table 9

Marginal Expenditure Shares (With/ Without Remittances), Overall

Commodity Groups	With Remittances				Without Remittances			
	Punjab	Sindh	KPK	Balochistan	Punjab	Sindh	KPK	Balochistan
Food and Drinks	0.151	0.198	0.162	0.204	0.195	0.213	0.165	0.335
Clothing and Footwear	0.282	0.014	0.033	0.018	0.035	0.021	0.030	0.021
Fuel and Lighting	0.047	0.032	0.037	0.029	0.050	0.045	0.032	0.051
Housing	0.180	0.387	0.161	0.321	0.213	0.335	0.223	0.217
Transport and Communications	0.108	0.081	0.105	0.088	0.096	0.084	0.080	0.109
Household Effects	0.013	0.001	0.023	0.006	0.028	0.011	0.019	0.009
Personal Effects	0.033	0.042	0.014	0.042	0.027	0.041	0.016	0.036
Healthcare	0.039	0.018	0.039	0.030	0.018	0.019	0.042	0.027
Education	0.103	0.119	0.136	0.173	0.077	0.080	0.118	0.057
Entertainment	0.014	0.021	0.006	0.008	0.011	0.020	0.006	0.011
Durables	0.256	0.001	0.209	−0.0001*	0.246	0.096	0.329	0.294
Miscellaneous	0.132	0.156	0.211	0.010	0.149	0.132	0.174	0.092

* Estimation based on 4 observations.

Table 9

Table 10

across all four provinces. Household effects are a necessity for remittance recipient households in Sindh, contrary to trends observed for both set of households across all provinces. Similarly, while personal effects are necessities for non-recipient households in all four provinces, they are a luxury for remittance recipient households in Sindh.

VI. CONCLUDING REMARKS

The purpose of this study has been to empirically test for the homogeneity of household consumption patterns across the four provinces of the country as well as explore the urban-rural variations within each province. The paper estimated average expenditure shares, marginal expenditure shares and expenditure elasticities at the provincial level as well as by urban/rural sectors within each province, using household level micro data for the year 2007-08.

We find support for the notion that household consumption patterns across the four provinces of the country are not homogeneous and in fact also exhibit variations across the urban/ rural divide within each province. The results indicate that expenditures on food and drinks account for the highest share of total household consumption expenditures across all provinces, with rural households spending considerably more on this expenditure head. Following this, housing is found to be receiving the highest share of total consumption expenditure across all provinces and within this category, urban households spend proportionately more than their rural counterparts.

Analysis of marginal expenditure shares reveals that households in Punjab and KPK have highest marginal spending on durables, followed by housing. Households in Sindh tend to spend marginally the highest on housing followed by foods and drinks and miscellaneous items. The marginal expenditure shares of rural households in all provinces are substantially higher for food and drinks, Moreover, rural households in all four provinces tend to spend more at the margin on clothing and footwear and durables, while urban households have higher marginal expenditure shares for education.

The analysis of expenditure elasticities, shows that for all four provinces; housing, transport and communications, education, household effects, durables and miscellaneous items are luxury goods, while entertainment is also a luxury in all provinces except Sindh. Of the remaining five expenditure categories—food and drinks, clothing and footwear, fuel and lighting and personal effects can be classified as necessities across all provinces, while healthcare is a necessity in all provinces except Balochistan. The urban/ rural breakup of expenditure elasticities some exceptions to the overall trends observed for each province above.

The study also examined the role of remittances in determining the level and distribution of household expenditures for the 12 expenditure groups across all four provinces, by comparing the consumption patterns of remittance recipient households with non-recipient households. This comparison shows differential impact of remittances across provinces and commodity groups. Across all four provinces, households receiving remittances are observed to spend proportionately and significantly less on transport and communication and food and drinks except Balochistan compared to their counterparts not receiving remittances. Another noteworthy finding is the higher budget shares of households receiving remittances on education in all provinces except Balochistan. In case of housing, remittance recipient households in Sindh have a significantly higher budget share compared to non-remittance recipient households, while for KPK the trend is reversed. In case of durables, no statistically significant difference is observed between the expenditure shares of remittance recipient and non-recipient households across all four provinces of the country.

In terms of the marginal expenditure shares, households getting remittances have a lower spending at the margin on food and drinks and a higher spending on education in all provinces, in comparison to non-recipient households. For the other commodity groups, mixed trends can be observed for remittance recipient and non-recipient households across different provinces. Our preliminary analysis highlights that remittances have played an important role in removing liquidity constraints of recipient household in all provinces, resulting in higher investment in education by these households.

APPENDIX – 1

Details of Commodity Groups

1. Food and Drinks	Milk and milk products, meat poultry and fish, fresh fruits, dry fruits and nuts, cereals, pulses, edible oils and fats, tea and coffee, baked and fried products, miscellaneous food items,
2. Clothing and Footwear	Clothing, clothing material and services, footwear and repair charges, other expenses on tire, tube, spare parts, repairs of vehicle etc. and service charges.
3. Fuel and lighting	Gas, electricity, fire-wood, kerosene oil, other household effects (bulbs, tubes, switches, battery cells, lamp shades etc.)
4. Personal effects	Personal care articles, personal care services, household laundry, cleaning and paper articles, personal durable effects (wrist / pocket watches, sun glasses, etc.), laundry and cleaning equipment (washer / dryer, vacuum cleaner, iron, iron board, etc.)
5. Housing	House rent and housing expenses, house and property tax etc.
6. Transport and Communications	Personal transport and travelling, petrol charges, repairing of wheel puncture, annual driving license fee, expenses on traveling by road by train and by air, vehicle registration fee, etc
7. Household effects	Readymade pillow covers, bed sheets, blankets, curtains, mosquito nets etc., purchase of cloth(for pillow covers, bed sheets quilts etc.) & purchase of cotton (for quilts, pillows, etc.), carding and other stitching charges on household textile, chinaware, silverware and kitchen equipment, furniture, fixture and furnishing, other household effects,
8. Healthcare	Purchase of medicine, hospitalisation expenses, medical fees, laboratory and physician's charges.
9. Education	School/college fees and private tuition fees, books and exercise note books / copies, stationary etc. other education expenses (bags, professional society membership, transportation etc.), hostel expenses, calculators, personal computers, mobiles etc,
10. Entertainment	Recreation & reading, expenditure on hobbies, cable installation recreational membership fee, toys, games, photography, lodging charges etc, radio and musical instruments(tape recorder, gramophone, TV, VCR, VCP, cassettes), recreational equipment (cameras, projector, shot gun, angling kit, bats, balls etc.)
11. Durables	Electric/ oil fans (table, pedestal, ceiling, exhaust), air conditioners, air coolers, refrigerators, freezers, heater, boiler, geyser (electric, gas, oil), table lamp, sewing machine, knitting machine (electric / hand), other (trunks, suitcase etc.), wall / table clock, water pipes (rubber, nylon, plastic), thermos bottle etc., service and repair charges of household effects, mentioned above
12. Miscellaneous	Stationery supplies such as pen, pencils, stapling machine, pin etc. (other than education purpose), crockery & cutlery for daily use, taxes & fines and all other miscellaneous expenditure, personal effects and service and repair charges

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