

The Demand for Services in India
A Mirror Image of Engel's Law for Food?

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1. Introduction

There is a wide consensus in the literature that, as an economy grows, both demand side and supply side factors lead to an increasing share of the services sector in output and employment. These factors comprise the following: high-income elasticity of demand for final product services, slower productivity growth in services that leads to higher employment potential, structural changes within the manufacturing sector which make contracting out services more efficient than producing them in the firm or household, increased international trade in services and improvements in technology.

In the literature, changing patterns of demand as an explanation for the increasing importance of the services sector have received special emphasis. The early writings of Clark (1940) and Kuznets (1971) argue that the income elasticity of demand for agricultural goods is low; that for industrial, particularly manufacturing goods is high and that for services is still higher. Hence, with rising levels of income, the relative demand for agricultural products declines, while that for manufacturing goods increases. Moreover, after reaching a sufficiently high level of income, demand for services increases sharply. Fisher (1935) refers to this transformation as a “hierarchy of needs”, defined by saturation of demand for manufactured goods and high-income elasticity of demand for services.

At a glance, the high income elasticity argument appears to have some merit in explaining the rapid growth of the services sector in India. This is reflected in the data at the macroeconomic level, which is summarized in Table 1 and Table 2.

Table 1: Private Final Consumption Expenditure on Services in India as a Percentage of Total Private Final Consumption Expenditure

Year	Percentage
1950-51	12.5
1960-61	12.5
1970-71	14.6
1980-81	16.8
1990-91	20.9
1999-00	27.2
2003-04	33.7

Source: Estimates based on National Accounts Statistics, Central Statistical Organisation

Table 2: Rates of Growth in India (per cent per annum)

	Private Final Consumption of Services	Value Added for the Services Sector	Gross Domestic Product
1970-71 to 1979-80	1.8	1.9	1.5
1980-81 to 1989-90	2.7	2.9	2.3
1990-91 to 1999-00	3.3	3.3	2.6
2000-01 to 2003-04	3.9	3.3	2.5

Source: Estimates based on National Accounts Statistics, Central Statistical Organisation

Note: Rates of growth for the three variables are computed by running Ordinary Least Squares regressions of the logarithm of each variable on a time trend

First, Table 1 indicates that the share of services in private final consumption expenditure has almost tripled during the period from 1950-51 to 2003-04. Second, Table 2 shows that during the 1980s and 1990s, which were periods of rapid growth of the services sector in India, as also during the 1970s, private final consumption of services grew at almost the same rate as value added in services. Hence, these data at the macroeconomic level imply that increasing final demand for services was largely responsible for the increasing share of the services sector in total output.

In order to establish the significance of rising final demand as an explanation for the increasing importance of the services sector, it is necessary to analyse patterns of expenditure at the level of the household. Hence, the objective of this chapter is to estimate demand-side relationships for different consumer services in India. In doing so, it estimates Engel curve-type relationships for services in the aggregate and for six categories of services. It is important to emphasize the fact that such an exercise has not been attempted in the literature on India. There are a couple of studies which estimate Engel curves

for expenditure on education and medicines in India while analyzing the presence of gender bias in household expenditure patterns [Kingdon (2005), Lancaster, Maitra and Ray (2008)]. However, their definition of education includes expenditure on both goods and services, while medicines are simply a good. There are similar studies in the literature on the subject for other countries and regions. They estimate Engel curve-type relationships for expenditure on education and health (goods and services) as a part of larger exercise which also includes analysis for food items and manufactured goods such as clothing and footwear. For services alone, there is one cross-country study by Falvey and Gemmell (1996) that uses data at the level of countries to analyse the income elasticity of demand for different service categories. There is no systematic analysis establishing Engel-curve type relationships for different services at the level of the household.

The scope of the chapter is limited to a cross-sectional analysis of household survey data from India for two points in time: 1993-94 and 2004-05. The structure of the chapter is as follows. Section 2 provides an overview on the concept of an Engel curve and the classification of commodities based on income elasticities of demand. Section 3 reviews the importance of rising final demand as an explanation for a growing services sector, in terms of both theory and evidence. Section 4 discusses the econometric methodology for estimating Engel curves. It reviews functional forms used in the literature, the problem of zero expenditure in consumption data, and methods employed in the literature to address these problems. Section 5 provides a discussion of the data under consideration and section 6 analyses descriptive statistics. Sections 7 and 8 specify different model specifications and discuss results. Section 9 presents conclusions.

2. Engel Curves

A. Definition

In a seminal article, Ernest Engel (1857) analysed the relationship between a household's expenditure on food and total household expenditure. Using cross-section data from household surveys of working class families in Belgium, he found that food expenditures are an increasing function of income, but that the proportion of expenditure spent on food decreases with income. This relationship of food budget shares and income, known as Engel's law, has since been found to hold in most economies and time periods. It is considered a starting point for any analysis of household budgets. And given that Engel's Law relates to cross-section analysis, it assumes that all households face the same commodity prices at any one point

in time. Hence, differences in consumption behaviour across different households are attributed to differences in income and household characteristics.

An Engel curve may be defined as a function that describes the relationship between a consumer's expenditure on some particular good or service and the consumer's total resources, holding prices fixed. Resources, in turn, refer to income, wealth, or total expenditure on goods and services. Most often, total expenditure serves as the measure for total resources. This serves to separate the problem of allocating total consumption to various goods from the decision of how much to save or dissave out of current income. In the literature, Engel curves are frequently expressed in the budget share form, i.e. the proportion of total expenditure spent on a particular good. The goods are typically aggregate commodities such as total food, clothing, or transportation, consumed over some weeks or months, rather than discrete purchases.

B. Points of Caution

The level of aggregation across goods may affect Engel curve estimates. Demand for a narrowly defined good such as apples varies erratically across consumers and over time, while Engel curves based on broad aggregates like food are affected by variation in the mix of goods purchased. While food, in the aggregate, is a necessity, it could include inferior goods like cabbage and luxuries like caviar, which may have very different Engel curve shapes.

Other empirical Engel curve complications include unobserved variations in the quality of goods purchased, and violations of the law of one price. When price or quality variation is unobserved, their effects may correlate with total income or expenditure. Examples of such correlations could include the wealthy systematically favouring higher quality goods or the poor facing higher prices than other consumers because they cannot afford to buy in bulk or travel to discount stores.

C. Luxuries versus Necessities

Engel curves are most often specified as the relationship between the budget share allocated to a particular good or service and total income or expenditure. Under this specification, luxuries are goods that take up a larger share of the budget for better-off households while necessities are goods that take up a smaller share of the budget for better-off households. In this context, Engel (1857) presents a downward sloping curve for food expenditure, thereby implying that it is a necessity.

It is worth noting that the literature distinguishes between luxury and necessity goods using income or expenditure elasticities of demand as well. The income or expenditure elasticity of demand for a commodity is defined as the ratio of the proportionate change in the expenditure on a particular good or service to the proportionate change in total income or expenditure. Given this definition, goods with income or expenditure elasticities of demand below zero, between zero and one, and above one are called 'inferior goods', 'necessities', and 'luxury goods' respectively. For instance, Engel's finding that food is a necessity good implies that income or expenditure elasticity of demand for food must be less than one. Of course, elasticities can themselves vary with income. For example, a good that is a necessity for the rich can be a luxury for the poor.

3. Growth of the Services Sector: Importance of Consumer Demand

In economic theory, it is widely believed that services are characterized by relatively high income elasticities of demand. This is based on the notion that while goods fulfill the need of basic necessities, services fulfill the desire for luxuries (Fisher, 1935). With changing times, however, this categorization of goods and services as necessities and luxuries respectively must be viewed with caution.

Some generalizations about income elasticities for broad categories of wants may be legitimate. For example, the demand for recreation is likely to be highly elastic with respect to income. However, such generalizations do not provide unambiguous conclusions about shifts in the relative importance of services and goods in consumer expenditure. This is because even a broad category of wants can be satisfied in a variety of ways, some involving a service and others involving a good. For instance, higher incomes may lead to the substitution of a good for a good (meat for bread), of a service for a service (an expensive restaurant meal for a cheap one), of a service for a good (restaurant food for home-cooked food), or of a good for a service (ready-to-serve food for domestic cooks).

Of the above, the last example is particularly interesting as it highlights the fact as incomes rise, consumers may substitute a service they previously hired for a good to satisfy the same want. In this context, consumer durables are an obvious case in point as they provide a flow of services over the duration of their life. For instance, as incomes rise, individuals may substitute the use of bus or auto-rickshaw services with a motorcycle or car they buy in the market. Similarly, as incomes rise, individuals may substitute going to the cinema and music performances by purchasing goods such as television sets and video cassette/DVD players.

In fact, according to Kravis et al (1983), the income elasticity of demand is only one of three sets of factors that influence changes in the division of consumers' expenditures between goods and services. They argue that because goods and services are often close substitutes in satisfying the same wants or desires, technology and relative prices also play an important role in determining whether the expansion path goes towards services or towards goods.

Rising income elasticity of demand as an explanation for the increasing share of services in output and employment has been empirically tested by a few studies. The results are ambiguous. For instance, in a cross-country study covering sixty countries in 1980, Falvey and Gemmell (1996) use data at the macroeconomic level to estimate the income elasticity of demand for services. They reject the hypothesis that the demand for services is income-elastic for services as a whole. At the same time, they find that while the income elasticity of demand is greater than unity for health services, communication services, recreation services and government services, it is less than unity for transport services and education services.

4. Estimation of Engel Curves: Econometric Analysis

A. Functional Forms Used in the Literature

In the empirical literature, Engel curves are close to linear for some goods, and highly nonlinear for others. Engel (1857, 1895) found that budget share devoted to food was close to linear in the logarithm of total expenditure or income. Several empirical studies, such as Ogburn (1919) and Allen and Bowley (1935) followed Engel (1895). They estimated linear Engel curves on data sets from a range of countries and found that the resulting errors in these models were quite large. The authors interpreted this as indicating considerable heterogeneity in tastes across consumers.

More recent work highlights considerable nonlinearity in Engel curves. Motivated by this nonlinearity, one of the earlier empirical applications of nonparametric regression methods in econometrics was kernel estimation of Engel curves. Examples include Bierens and Pott-Buter (1990), Lewbel (1991), and Hurdle and Jerison (1991). More recent studies control for complications like measurement error and other covariates, including Hausman, Newey, and Powell (1995) and Banks, Blundell, and Lewbel (1997). Some reveal considerable curvature, including quadratics or S shapes.

A section of the empirical literature argues that other variables may also help explain cross section variation in demand. Commonly used covariates include household size, age, gender, location measures, race and ethnicity, seasonal effects, and labor market status. Variables indicating ownership of a home, a car, or other large durables can also have considerable explanatory power, though these are themselves consumption decisions. Engel's original work showed the relevance of household size, and later studies confirm that larger families typically have larger budget shares of necessities than smaller families at the same income level.

B. The Problem of Zero Expenditure

Some economic variables cannot by their very nature take on negative values. In a microeconomic context, such variables include household expenditure and labour supply. In many household expenditure surveys, respondents report zero expenditure on certain goods. This represents an important challenge for any econometric analysis of such data because factors that cause zero expenditure have important implications for consistently recovering demand relationships. In the literature, there are two frequently cited reasons for a household reporting no expenditure on a good: non-consumption or the inability to purchase and infrequency of purchase.

First, zero expenditure on certain goods may be the utility maximising solution to a household's expenditure choice problem, i.e. it represents an expenditure decision. This is the case of non-consumption. For example, there may be no set of relative prices that will induce a household to purchase certain consumer durables. Moreover, it is plausible to assume that households, whose optimal level of expenditure for a given commodity is zero, are unlikely to change their behaviour significantly for a small change in relative prices. Second, there is the case of infrequency of purchase. This occurs when the survey period is not long enough to capture expenditures on goods that a household is likely to purchase at some point in the future, or on commodities that they have previously purchased. For example, expenditure on footwear may be zero but at the same time this may not be true in the long run. Of course, problems associated with infrequency of purchase are not limited to zeroes. Households that begin the survey period with a large stock of a given commodity may be observed purchasing a very small quantity of that commodity. In contrast to the case of non-consumption, changes in relative prices will result in changes in expenditure amongst those households with zero recorded expenditure. In practice, both kinds of zeros are likely to be present in a large enough sample. According to Meghir and Robin (1992), given the type of data usually available in household surveys, it is not possible to identify the nature of zeros

without prior information. Hence, the assumption that they are the result of non-consumption or infrequency of purchase is an indentifying assumption.

Importantly, in the conventional linear regression model, the dependent variable can take on any positive or negative value. Hence, given a large number of households that report zero expenditure on different items in consumption data, the estimation of a model by ordinary least squares results in biased and inconsistent parameter estimates (Wooldridge, 2002). In the literature, two non-linear estimators are frequently used to address this issue. Let us analyse them, in turn.

C. Addressing the Problem of Zero Expenditure: Methods Used in the Literature

(i) Tobit Model

A well-established solution to the problem of zero expenditure is to use a Tobit model. It is a regression model in which the values of the endogenous variable are truncated at zero and only positive values are assumed. Deaton and Irish (1984) were amongst the first to use generalizations of the Tobit model to analyse the demand for commodities where non-consumption seems a reasonable assumption, e.g. alcohol and tobacco. The following is a brief description.

The theory of econometrics contains a class of models traditionally referred to as censored regression models. In general, they are an appropriate tool of analysis when the variable to be explained is partly continuous but has positive probability mass at one or more points (Wooldridge, 2002). In particular, they are especially relevant for analysing an observable choice or outcome variable which takes on the value zero with positive probability but is a continuous random variable over strictly positive values. Examples of such variables include, labour supply, life insurance coverage chosen by individuals, household expenditure on goods, and firm expenditures on research and development. For each of these examples, we can assume economic agents solving an optimization problem, where for some agents the optimal choice will be the corner solution, zero. The standard censored Tobit model (Tobin, 1956) is most appropriate to analyse such economic variables. It specifies a regression framework where the dependent variable can be zero with positive probability and where the conditional expectation is not a linear function of parameters. It is represented by the following equation for a randomly drawn observation ‘ i ’ from the population:

$$y_i^* = x_i\beta + u_i$$

$$y_i = \max(0, y_i^*)$$

where u_i is normally distributed, y_i is observed expenditure and y_i^* is latent expenditure.

(ii) Censored Quantile Regressions

Tobit models, used to correct for censoring, estimate the conditional mean effect of changes in the independent variables on the dependent variable. However, in the context of analysing consumption expenditure data, it is likely that the effect of a rise in total income or expenditure on the expenditure on a particular good or service is likely to be different for low-consuming households and high-consuming households. Tobit models, like Ordinary Least Squares, base inferences on mean expenditure and hence do not capture this difference in expenditure patterns. Moreover, if the error term is heteroscedastic or non-normally distributed, Tobit models do not give consistent parameter estimates [Wooldridge, 2002]. Given the above, an alternative method used by studies in the literature to overcome the zero expenditures problem is censored quantile regressions [Gustavsen and Rickertsen, 2004, Gustavsen, Jolliffe and Rickertsen, 2008 and Muller, 1999].

Given the relevance of censored quantile regression in addressing the zero expenditures problem, it is first helpful to briefly review the concept of a quantile regression. Quantiles are order statistics which divide a sample of observations on a variable, budget shares for example, into two or more groups. Quantile regressions, as introduced by Koenker and Basset (1978), seek to estimate conditional quantile functions, i.e. models in which quantiles of the conditional distribution of the response variable are expressed in terms of observed covariates.

$$y_i = x_i' \beta_\theta + \varepsilon_{\theta i} \quad \text{and} \quad Q_\theta(y_i | x_i) = x_i' \beta_\theta$$

where $Q_\theta(y_i | x_i) = x_i' \beta_\theta$ denotes the θ^{th} quantile of y_i

In order to highlight the difference between OLS regression estimates and quantile regression estimates, Koenker and Hallock (2001) show that the least squares fit provides a rather poor estimate of the conditional mean for the poorest households in the sample as the least squares fitted line passes above all of the very low income observations. The results also reveal the tendency of the dispersion of food expenditure to increase along with its level as household income increases. Quantile regressions are well suited to the analysis of household survey data also for the reason that they are robust to outliers as the objective function depends on the absolute values of the residuals and not the square of residuals.

According to Deaton (1997), when working with large scale household survey data this is a major advantage as outliers appear to be the rule rather than the exception. In his study on Pakistan, for example, Deaton (1997) finds differences in slopes for different regression quantiles in his estimation of Engel curves for food.

Quantile regressions in themselves, however, cannot solve the problem of zero expenditure in household consumption data. Censoring is particularly a problem for households at the lower quantiles of purchases of any good or service. This problem is overcome by using a censored quantile regression which works in much the same way as the Tobit model, i.e. household purchases are censored at zero and only positive purchases are assumed. Importantly, unlike Tobit models, censored quantile regressions provide consistent parameter estimates when the error terms are heteroscedastic or non-normally distributed [Powell, 1986].

$$Q_{\theta}(y_i | x_i) = \max\{0, Q_{\theta}(x_i'\beta_{\theta} + \varepsilon_{\theta i} | x_i)\} = \max(0, x_i'\beta_{\theta})$$

5. Data

A. Sample: Source and Size

In order to analyze patterns of expenditure for different consumer services at the level of the household in India, a necessary condition is the availability of consumption data at the level of the household. Surveys on consumer expenditure, conducted regularly by India's National Sample Survey Organisation (NSSO), collect such micro-level data, thereby providing the opportunity to carry out empirical research hitherto not done. And such research can make an original contribution to understanding.

The first comprehensive survey on consumer expenditure was carried out during the period from September 1972 to October 1973, corresponding to the 27th round of NSSO. After the 27th round, six comprehensive quinquennial (once in five years) surveys on consumer expenditure in India have been carried out by the NSSO. These were carried out during the 32nd round (July 1977 to June 1978), 38th round (January 1983 to December 1983), 43rd round (July 1987 to June 1988), 50th round (July 1993 to June 1994), and 55th round (July 1999 to June 2000), and 61st round (July 2004 to June 2005). Unfortunately, these surveys do not track down the same individuals over time. It is also worth mentioning that during the period from 1951 to 1967-68, the NSSO conducted annual surveys on

employment in the country. However, these surveys had several shortcomings including relatively small samples and problems of comparability over time.

For the present exercise, the data are taken from two of the seven comprehensive quinquennial surveys on consumer expenditure conducted in independent India: the 50th round of the National Sample Survey conducted during the period from July 1993 to June 1994 and the 61st round of the National Sample Survey during the period from July 2004 to June 2005. Spread over 6,951 villages and 4,650 urban blocks, the former has a sample size of 115,354 households. Similarly, spread over 7,999 villages and 4,602 urban blocks, the latter has a sample size of 124,644 households. Moreover, in both surveys, 60 per cent of households in the sample are located in rural areas while 40 per cent of the households are located in urban areas. Importantly, these large sample sizes are a real strength of the econometric analysis to follow. In terms of geographical coverage, both surveys cover the whole of India except certain districts of Jammu & Kashmir and certain interior areas of Nagaland and of the Andaman and Nicobar Islands.

Table 3: Sample Size

	1993-94 (50 th Round)	2004-05 (61 st Round)
Number of Villages Surveyed	6,951	7,999
Number of Urban Blocks Surveyed	4,650	4,602
Number of Households Surveyed (Total)	115,354	124,644
Number of Households Surveyed (Rural areas)	69,206	79,298
Number of Households Surveyed (Urban areas)	46,148	45,346

Source: Surveys on Employment, National Sample Survey Organisation

B. Sample Design

For both 1993-94 and 2004-05, the survey period of the round was divided into four sub-rounds, each with a duration of three months. For 1993-94, the first sub-round period ranges from July to September 1993, the second sub-round covers the period from October to December 1993, the third sub-round ranges from January to March 1994, and the fourth sub-round covers the period from April to June 1994. Similarly, for 2004-05, the first sub-round period ranges from July to September 2004, the second sub-round covers the period from October to December 2004, the third sub-round ranges from January to March 2005, and the fourth sub-round covers the period from April to June 2005. What is more, for both surveys, an equal number of sample villages or blocks were allotted for survey in each of these four sub-rounds.

The sample design adopted in these surveys is a stratified two-stage design for both rural and urban areas. The first stage units (FSUs) are villages for rural areas and the NSSO Urban Frame Survey (UFS) blocks for urban areas. The second stage units (SSUs) are households for both rural and urban areas. The method of selection of the first stage and second stage units is as follows. At an all-India level, for rural areas, the list of the most recent census villages constitutes the sampling frame for selection of sample FSUs¹. Similarly, at an all-India level, for urban areas, the latest lists of UFS blocks constitute the sampling frame for selection of sample FSUs. Often, villages and urban blocks with populations above a certain threshold level were divided into a suitable number of sub-groups having equal population count. These groups are called hamlet-groups and sub-blocks for rural areas and urban areas respectively. The total number of first stage units in the survey is allocated to the different states in proportion to population as per census data. This, in turn, is then allocated between rural and urban sectors also in proportion to population as per census data. In other words, within each district of a state, two separate basic strata were formed for rural areas and urban areas. All rural areas of the district comprised the rural stratum and all the urban areas of the district comprised the urban stratum. It is worth noting that a small percentage of FSU's initially selected for the survey could not be surveyed.

After the selection of the first-stage units (villages and urban blocks), second-stage units, which are households are selected. In rural areas, for selected villages, certain relatively affluent households are identified and considered as second stage stratum 1 and the rest as stratum 2. In fact, a total of ten households are surveyed from the selected village groups, two from the first category and eight from the second. On the other hand, in urban areas, households with a monthly per capita expenditure above a certain threshold are considered as second stage stratum 1 and the rest as stratum 2. Once again, a total of ten households are surveyed from the selected urban blocks; four households from second stage stratum 1 and six households from second stage stratum 2 for the relatively affluent areas with larger populations, and two households from second stage stratum 1 and eight from second stage stratum 2 for the other strata or classes. It is worth noting that within each stratum, for both rural and urban areas, the surveys use the interview method of data collection from a sample of randomly selected households.

¹ For the rural areas of Kerala, however, the list of *panchayat* wards was used as the sampling frame for selection of FSU's.

C. Definitions

A *household* is defined as a group of persons normally living together and consuming food from a common kitchen. The word "normally" implies that temporary visitors are excluded, while temporary stay-aways are included². Individuals residing in hotels, boarding and lodging houses, hostels etc. are considered as single-member households except that a family living in a hotel is considered as one household only; the same applies to residential staff of such establishments.

The expenditure incurred by a household on domestic consumption during the reference period is the *household's consumer expenditure*. It is the total monetary values of consumption of the following groups of items: food, *pan* (betel leaves), tobacco³, intoxicants, fuel & light, clothing and footwear, and all other goods and services, including durable articles. Usually, this total consumer expenditure is expressed on a per month or 30 days basis. Moreover, it can also be expressed in per capita terms by dividing household consumption expenditure by household size. For some categories of goods, however, there are two reference periods used for the collection of consumption data. In particular, for clothing, footwear, education, institutional health care and durable goods, there are two estimates for aggregate or per capita household consumption: expenditure in the "last 30 days" and expenditure in the "last 365 days". On the other hand, for food, *pan* (betel leaves), tobacco and intoxicants, fuel and light, and other miscellaneous goods and services including non-institutional health care, there is only one estimate for household consumption. It is based on expenditure incurred over the "last 30 days".

D. Types of Services

The survey consists of household expenditure data on a large number of goods and services. In order to facilitate a meaningful analysis, we aggregate items to form six distinct categories of services: education services, health services, entertainment services, personal services, communication services and transport services. The following is a brief description of the activities covered under each category.

Education services primarily consist of expenditure on tuition and other fees at schools, colleges and training institutes. Other fees include boarding costs at residential schools and colleges. What is more, all compulsory payments collected by educational institutions at the time of admission or along with the

² For example, any dependent residing in a hostel for academic purposes is excluded from the household of his or her parents. In contrast, a resident employee, a resident domestic servant or paying guest (but not just a tenant in the house) is included in the household of the employer.

³ Several households may not spend any money explicitly on food, *pan* (betel leaves) and tobacco due to consumption of home produce. The surveys under consideration impute values in order to capture this consumption.

regular fees are regarded as part of the expenditure for education even if termed “donations” by institutions collecting them. Donations to schools made voluntarily on account of charities are not included here because they are regarded as transfer payments. Education services also comprise expenses incurred in hiring private tutors, joining coaching centres, library charges, and expenditure on securing Internet connectivity for the purposes of education. This category, however, does not include expenditure on goods purchased for the purpose of education, i.e. uniforms, books, journals, newspapers, paper, stationery, magazines and novels. Transport costs such as expenditure on school buses and vans is also not included in this category.

Health services consist of two categories: institutional and non-institutional. The distinction between institutional and non-institutional medical expenses lies in whether the expenses were incurred on medical treatment as an in-patient of a medical institution, or otherwise. The former comprise expenditure on doctor’s fees, hospital or nursing home charges, medical tests such as X-rays, ECG and pathological tests. The latter comprise expenditure on doctor’s fees, medical tests such as X-rays, ECG, pathological tests, and family planning. Medical institutions include private as well as government hospitals and nursing homes. Health Insurance premiums are not included under this expenditure head as they are not covered in the questionnaire. Importantly, this category does not include expenditure incurred by individuals on purchasing medicine.

Entertainment services include expenditure on cinema, theatre, fairs, picnics, sports goods, and processing and developing of photographic film. Entertainment services also consist of charges paid for hiring VCRs, video cassettes and video CDs, and expenses incurred on subscription to cable television facilities. Membership fees for clubs offering facilities for sports and recreational activities are also included here. Expenditure on consumer durables, however, is not included in this category.

Personal services entail expenditure on domestic servants, cooks, washer men, laundry services, ironing, sweepers, barbers and beauticians. It is also includes expenditure on services rendered by tailors, priests, and individuals who repair non-durables. Expenditure on legal services is not included as it has negligible non-zero entries.

Communication services consist of expenditure on postage (letters and telegrams), telephone charges, and internet connectivity charges. Expenditure on computers is not included here, but under the category of consumer durables.

Transport services primarily consist of expenditure on journeys undertaken and transportation of goods made by any of the following means of conveyance: airlines, the railways, buses, trams, taxis, auto-rickshaws, cycle rickshaws, steamers, boats, and horse carts. The expenditure is the actual fare paid except in case of railway season tickets, for which expenditure is calculated as the cost of the ticket divided by the number of months for which it is valid. It is worth noting that while expenditure on journeys to commute to and from an individual's place of work is included in the consumer expenditure of the household, expenditure on journeys undertaken by household members as part of official tours is not. Moreover, expenditure incurred on journeys undertaken under the Leave Travel Concession scheme, even if reimbursed, is included. Transport services also consist of porter charges. Finally, in the case of owner-used conveyance, the cost of fuel (petrol, diesel, and mobile oil) for power-driven transport and animal feed for animal-drawn carriage is included under the expenditure head of transport services.

6. Descriptive Statistics

The econometric analysis to follow will establish Engel curve-type relationships for six categories of services and for services in the aggregate. The appropriateness of using ordinary least squares, however, depends upon the number of households in the sample that report zero expenditure on the different services. In this context, a general rule of thumb implies is that if the dependent variable in a regression model has zero entries which amount to more than 10 per cent of the sample, OLS yields inconsistent parameter estimates [Wooldridge, 2002]. The following table reports this statistic for both survey rounds under consideration: 2004-05 and 1993-94.

Table 4: Households in the Sample with Zero Expenditure on Different Services

	Number (2004-05)	Number (1993-94)	Percentage (2004-05)	Percentage (1993-94)	Percentage Difference (1993-94 to 2004-05)
Education Services	56,841	63,281	45	55	-10
Health Services	85,828	86,467	68	75	-7
Entertainment Services	80,042	85,676	64	74	-10
Personal Services	7,740	33,040	6	29	-23
Communication Services	68,528	88,641	55	77	-22
Transport Services	33,780	45,925	27	40	-13
Total Number of Households in the Sample (2004-05): 124,644					
Total Number of Households in the Sample (1993-94): 115,354					

Source: National Sample Survey Organisation, Surveys on Consumer Expenditure

Table 4 shows that for the survey of 2004-05, as high as 68 per cent of households in the sample report zero expenditure on health services and 64 per cent of households in the sample report zero expenditure

on entertainment services. For communication services and education services, this statistic is 55 per cent and 45 per cent respectively. The percentage of households that report zero expenditure on transport services and personal services is relatively lower at 27 per cent and 6 per cent respectively. On the other hand, Table 4 shows that for the survey of 1993-94, as high as 77 per cent, 75 per cent and 74 per cent of households in the sample report zero expenditure on communication services, health services and entertainment services respectively. For education services and transport services, this statistic is 55 per cent and 40 per cent respectively. The percentage of households that report zero expenditure on personal services is relatively lower at 29 per cent. Hence, in both surveys, the percentage of households that report zero expenditure on the different services is greater than ten for each of the six categories of services. The one exception is personal services for the survey of 2004-05. Moreover, it can be seen from the above tables that the percentage of households that report zero expenditure in each of the six categories of services is lower for the survey of 1993-94 relative to the survey of 2004-05. This may reflect a rise in living standards for lower income groups during this period.

While a large number of households report zero expenditure on each of the six different services categories, there are a large number of households with positive expenditures on these services as well. Hence, dispersion in levels of expenditure on a particular service across households in the sample is likely to be large. Moreover, expenditure of households on certain services may be higher, on average, than expenditure of households on other services. Table 5 presents summary statistics that may be indicative of such trends for the two survey rounds under consideration.

Table 5: Summary Statistics on Consumer Expenditure

	Mean (2004-05)	Standard Deviation (2004-05)	Mean (1993-94)	Standard Deviation (1993-94)
Household Expenditure	3687.6	4398.5	1860.0	2433.4
Expenditure on Education Services	125.1	393.1	29.8	133.2
Expenditure on Health Services	62.2	436.4	14.9	90.9
Expenditure on Entertainment Services	43.6	104.4	8.3	36.0
Expenditure on Personal Services	108.5	236.5	28.7	79.7
Expenditure on Communication Services	80.4	194.8	8.1	57.9
Expenditure on Transport Services	190.5	485.9	46.1	155.5

Note: All variables are expressed in Rupees per month

For the survey of 2004-05, Table 5 shows that among the different service categories, mean household expenditure is the lowest for entertainment services and health services. This may be explained by the fact that these two service categories have the highest number of households that report zero expenditure. In

contrast, mean household expenditure is the highest for transport services and education services. This may be attributable to a significantly lower number of households that report zero expenditure. Moreover, certain households may incur high levels of expenditure on education and transport services due to high fees at private educational institutions and high costs of air travel respectively. Finally, mean household expenditure for personal services and communication services lies in the intermediate range, relative to the other service categories. For communication services, this may be due to a smaller number of households that report zero expenditure relative to health and entertainment, but a larger number of households that report zero expenditure relative to education and transport services. For personal services, however, the number of households that report zero expenditure is the lowest among the six service categories. Hence, a moderate level of mean household expenditure may be explained by the fact the nature of tasks involved does require even the rich to spend large sums of money on acquiring these services. Table 5 shows that while the results are broadly similar for the survey of 1993-94, there is one important difference. Along with entertainment services, mean household expenditure is the lowest for communication services. This may be attributable to the fact that people then spent nothing or very little on telecommunication services, primarily telephones.

Furthermore, there is considerable dispersion in spending on a particular service across households in the sample. For the 2004-05 survey and the 1993-94 survey, among the six service categories, expenditure on transport services, health services and education services have relatively high standard deviations. On the other hand, while personal services and communication services have moderate standard deviations, entertainment services have the lowest standard deviation in relative terms. It is worth noting that the mean expenditure and standard deviation of expenditure on each service category and that of total household expenditure is higher for the sample of 2004-05 relative to that of 1993-94. This may be indicative of rising overall prosperity together with rising income inequality.

7. Model Specifications and Results: Tobit

The following table explains the notation used for different variables that are used in the equations to follow.

Table 6: Notation and Description of Variables

Variable Notation	Variable Description
SERVICSPROP	Proportion of total expenditure spent on services in the aggregate
EDUPROP	Proportion of total expenditure spent on education services
HEALTHPROP	Proportion of total expenditure spent on health services
ENTPROP	Proportion of total expenditure spent on entertainment services
PERSONALPROP	Proportion of total expenditure spent on personal services
COMMPROP	Proportion of total expenditure spent on communication services
TRANSPROP	Proportion of total expenditure spent on transport services
TOTALEXP	Total expenditure of a household
X	Vector of control variables which includes household size, household social group, household religion, age-sex categories that capture household composition, and age, gender and level of education of household head

A. Results

We estimate Engel curve-type relationships for services in the aggregate and for six categories of services using a Tobit model. The linear budget share equations specified below have been used consistently in the literature on Engel curve analysis. First proposed by Working (1943), it is known as the Working-Leser model as Leser (1963) found that this functional form fits better than other alternatives. A recent application of this specification is a study by Beatty (2006) who analyses Engel curves for a variety of food items in Canada.

$$SERVICSPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$EDUPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$HEALTHPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$ENTPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$PERSONALPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$COMMPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$TRANSPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon$$

All the above regression equations (excluding 'X', the vector of control variables) are estimated at the all-India level, for rural areas, and for urban areas. And given our linear budget share specification, a particular service may be classified as a luxury good if $\hat{\beta} > 0$.

Table 7**Dependent Variable: Proportion of Household Expenditure Spent on Services**

Explanatory Variable ↓	All-India (2004-05)	Rural (2004-05)	Urban (2004-05)	All-India (1993-94)	Rural (1993-94)	Urban (1993-94)
Log of Household Expenditure	0.072*** [0.0005]	0.056*** [0.0006]	0.086*** [0.0010]	0.037*** [0.0003]	0.028*** [0.0003]	0.037*** [0.0006]
Constant	-0.452*** [0.0045]	-0.332*** [0.0053]	-0.536*** [0.0082]	-0.220*** [0.0025]	-0.161*** [0.0024]	-0.207*** [0.0050]
Vector of Control Variables	No	No	No	No	No	No
State Dummy Variables	No	No	No	No	No	No
Observations	124642	79296	45346	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 7 shows that in 2004-05, the estimated $\hat{\beta}$ s for services in the aggregate are 0.072, 0.056 and 0.086 for the all-India sample, rural areas and urban areas respectively, each being significant at the 1 per cent level of significance. Similarly, Table 7 shows that in 1993-94, the estimated $\hat{\beta}$ s for services in the aggregate are 0.037, 0.028 and 0.037 for the all-India sample, rural areas and urban areas respectively, each being significant at the 1 per cent level of significance. This implies that an increase in the level of total household expenditure has a significant, positive impact on the proportion of expenditure spent on aggregate services. Similarly, both for 2004-05 and 1993-94, the estimated $\hat{\beta}$ s for each of the six specific service categories are positive and significant at the 1 per cent level of significance (see Appendix Tables 1 to 7 for the sample of 2004-05 and Appendix Tables 36 to 42 for the sample of 1993-94). This holds true for the all-India sample, rural areas and urban areas.

This above can also be seen in a graphical representation of our estimates (see Figures 1 to 7). The upward sloping Engel curves, specified here as the relationship between the budget share spent on a particular service and total expenditure, imply that services in the aggregate and each of the six types of services represent luxury, or superior, goods.

Figure 1

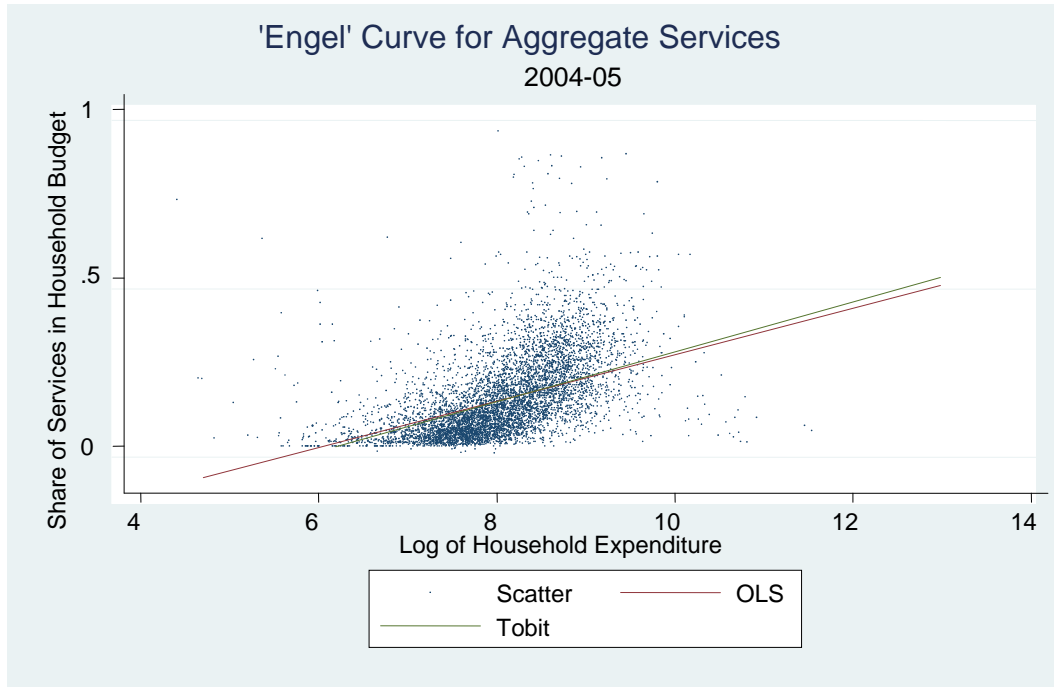


Figure 2

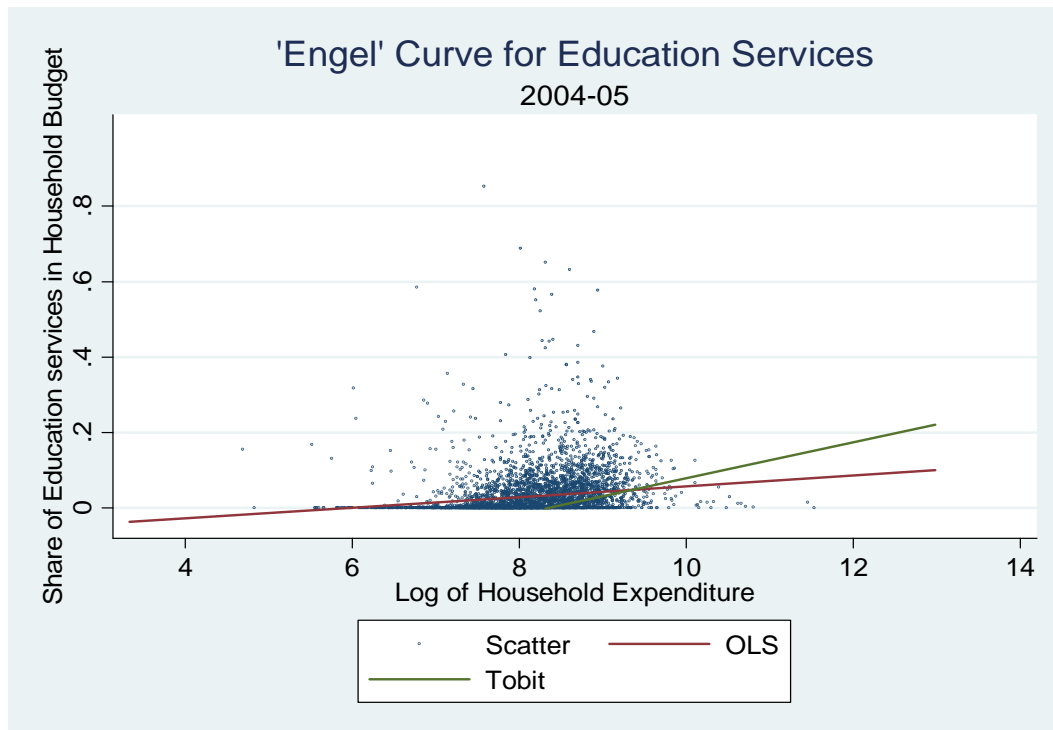


Figure 3

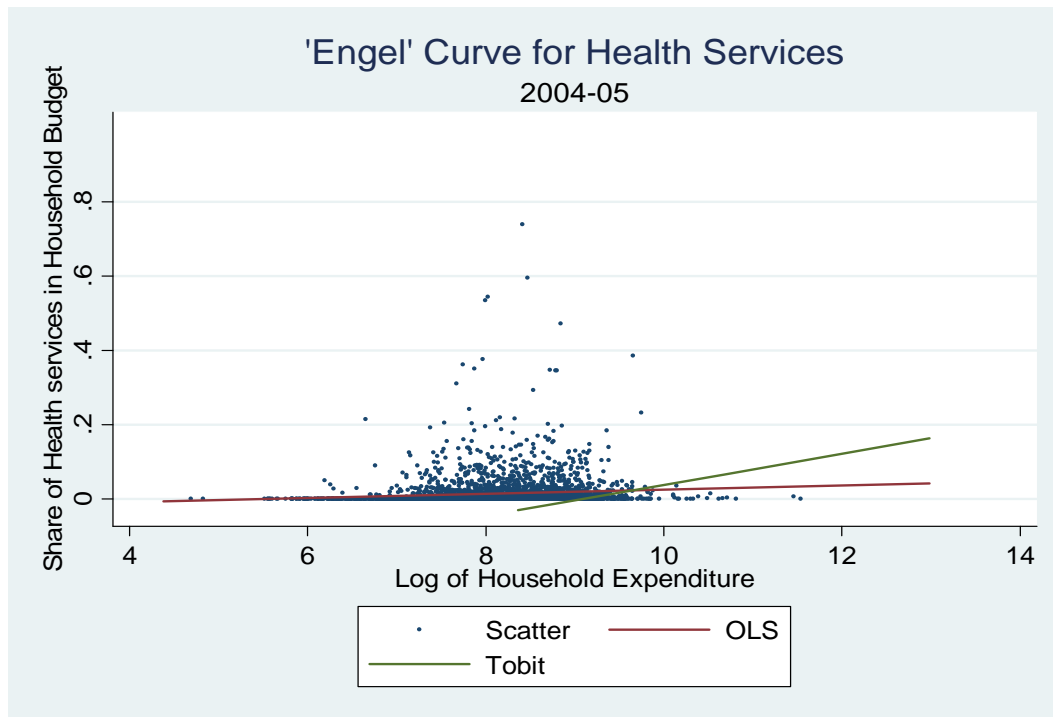


Figure 4

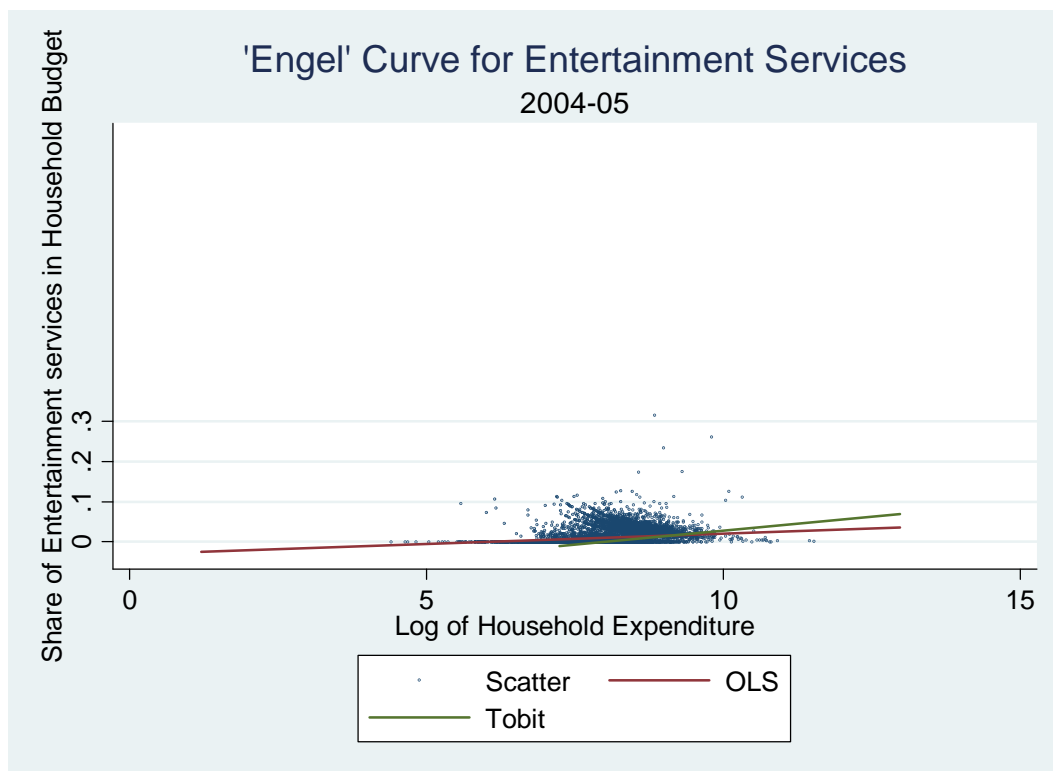


Figure 5

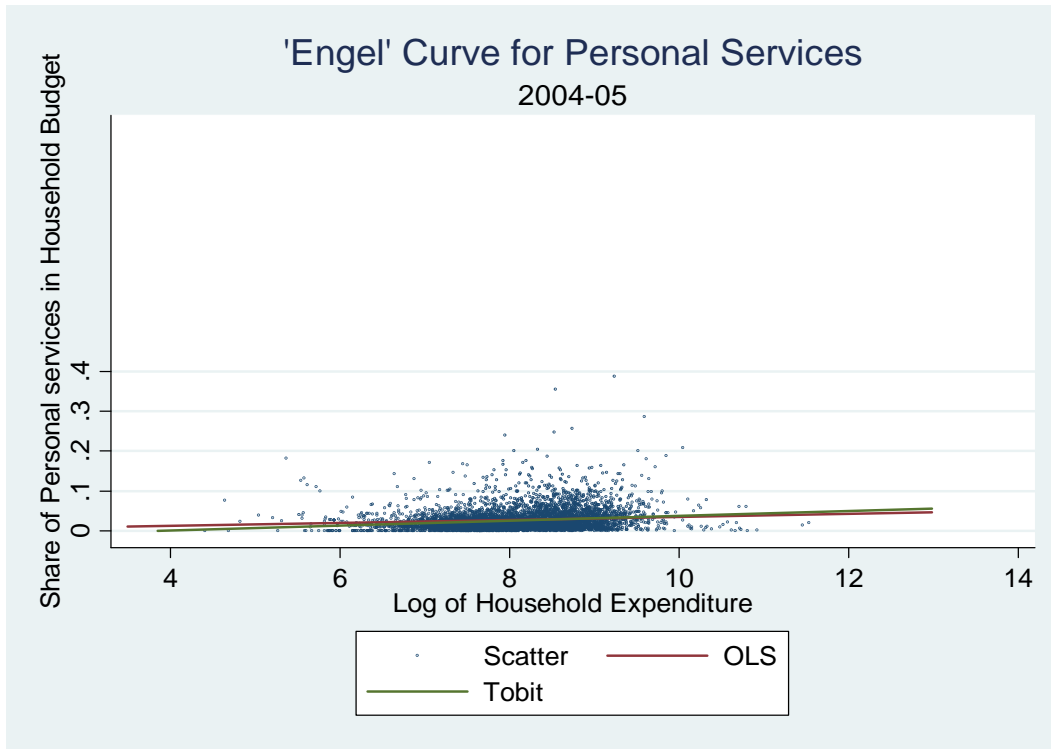


Figure 6

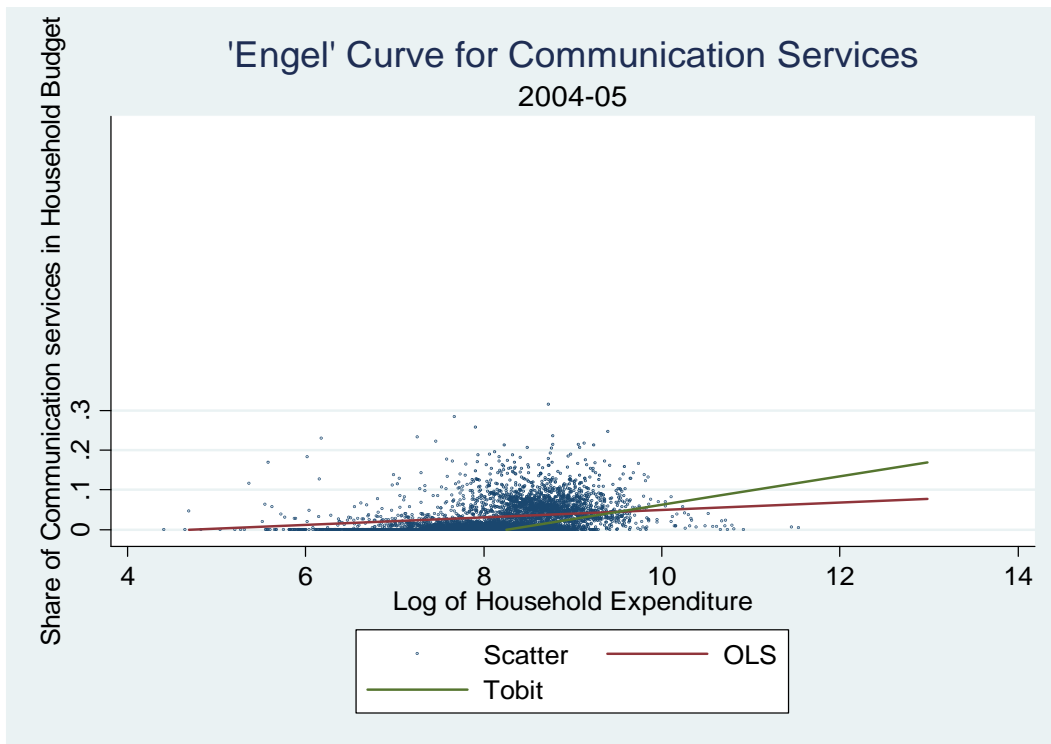
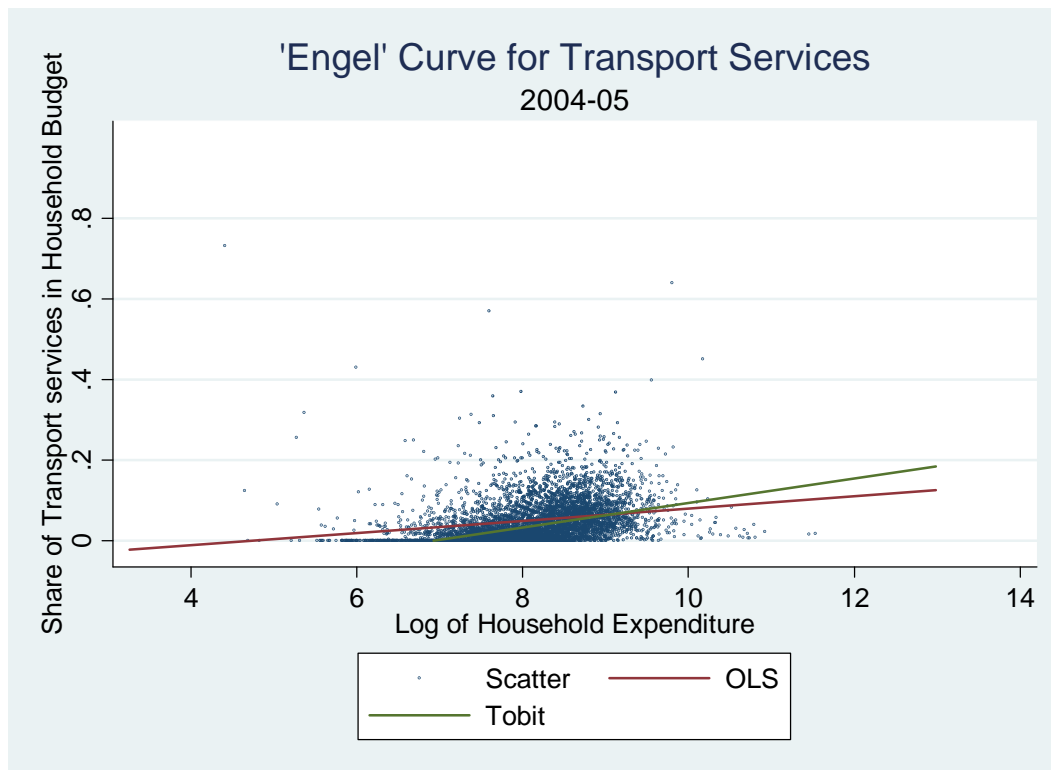


Figure 7



In the above figures, it is important to note that for each services activity under consideration, we have Engel curves estimated by both Ordinary Least Squares (OLS) and Tobit for the sample of 2004-05. It can be seen that except in the case of services in the aggregate and personal services, the curve estimated using Tobit is steeper than the curve estimated by OLS, and starts at a point farther towards the right on the horizontal axis. This highlights two important analytical insights. First, the OLS estimates which are inconsistent, underestimate the effect of a unit increase in total expenditure on the proportion of expenditure spent on a particular service. Second, households with relatively low levels of income may spend nothing on the different services. It is only beyond a certain level of total household income or expenditure that households begin to spend on different services. For personal services (see figure 4), the fitted values estimated by OLS and Tobit nearly coincide, although the Engel curve estimated by Tobit starts at a slightly higher level of total expenditure. The insignificant difference between the two curves in this figure is attributable to the fact that the number of households with zero expenditure on personal services is low. Similarly, for services in the aggregate, Tobit and OLS give the same results as the number of households with zero expenditure on any service is less than 10 in a sample of 124,644.

B. Robustness Checks

We test the robustness of our Engel curve estimates in two ways. First, we re-estimate the equations specified above by including a vector of control variables (defined earlier in Table 6) along with state dummy variables. Table 8 shows that the inclusion of these variables makes little difference to the magnitude or statistical significance of coefficients on the level of total household expenditure in the Engel curve for services in the aggregate. The estimated $\hat{\beta}s$ remain positive and significant at the 1 per cent level of significance for the all-India sample, rural areas and urban areas. The same holds true for each of the six specific services categories (see Appendix Tables 1 to 7 and Appendix Tables 36 to 42)

Table 8
Dependent Variable: Proportion of Household Expenditure Spent on Services

Explanatory Variable ↓	All-India (2004-05)	Rural (2004-05)	Urban (2004-05)	All-India (1993-94)	Rural (1993-94)	Urban (1993-94)
Log of Household Expenditure	0.071*** [0.0007]	0.059*** [0.0009]	0.082*** [0.0013]	0.036*** [0.0004]	0.031*** [0.0004]	0.038*** [0.0008]
Constant	-0.459*** [0.0083]	-0.384*** [0.011]	-0.540*** [0.014]	-0.197*** [0.0053]	-0.157*** [0.0074]	-0.207*** [0.0090]
Vector of Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	124640	79295	45345	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

What is more, the fact that the above results hold true for the sample of 2004-05 and that of 1993-94 further ensures the robustness of our estimates. Unfortunately, we cannot carry out panel data analysis as the two surveys do not cover the same households. At the same time, we may compare the Engel curve analysis for the two years by carrying out a decomposition exercise. In particular, we utilise the Blinder-Oaxaca decomposition technique to decompose the change in household budget share allocated to services in the aggregate between 1993-94 and 2004-05 into a part that is explained by changes in a vector of explanatory variables a part that cannot be explained by these changes. The vector of explanatory variables includes total household expenditure, household size, age, sex and education level of household head, proportion of household members in different age-sex categories and dummy variables for household caste and religion. The following table shows the result of the Blinder-Oaxaca decomposition exercise.

Table 9: Decomposition of an Increase in Household Budget Share allocated to Services

1993-94 to 2004-05	Coefficient (All-India) Based on means of 2004-05 and coefficients of 1993-94	Coefficient (All-India) Based on means of 1993-94 and coefficients of 2004-05
Difference	0.075	0.075
Mean Characteristics Total Household Expenditure	0.058 0.050	0.057 0.050
Coefficients	0.017	0.018

Source: Own Estimates

The coefficient on the mean characteristics term reflects the mean increase in the household budget share allocated to services if households in 1993-94 had the same characteristics as households in 2004-05. When the coefficients of 1993-94 are used, there is an increase of 0.058 which indicates that differences in mean characteristics account for about 80 per cent of the mean increase in household budget share allocated to services for the all-India sample. This constitutes the explained part of the decomposition. In fact, it is the difference in mean household expenditure that accounts for about 75 per cent of the mean increase in household budget share allocated to services. This implies that income effects are paramount, while other control variable effects are relatively unimportant. Second, the coefficient on the coefficients term quantifies the change in the household budget share allocated to services when applying the 2004-05 coefficients to the characteristics of households in 1993-94. When the coefficients of 1993-94 are used, there is a change of 0.018 which indicates that differences in coefficients, including the intercept, accounts for about only 20 per cent of the mean increase in household budget share allocated to services for the all-India sample. This constitutes the unexplained part of the decomposition. The results for rural areas and urban areas are broadly similar, but not reported for the sake of space. Moreover, it can be seen in Table 9 that the results of the decomposition exercise are almost identical when we instead use the coefficients of 2004-05.

For the unexplained part of the decomposition, however, the presence of dummy variables implies that there is a trade-off between the difference in intercepts and the part attributed to differences in slope coefficients. Changing the omitted or base category not only changes the results for the single dummy variables but also changes the contribution of the categorical variable as a whole. In the present exercise, the intercept term declined by 24 per cent over the eleven years (see Appendix Tables 1 and 36). This relates to the change in the household budget share allocated to services for households possessing the characteristics of the omitted categories. These include households with female household heads, less

educated household heads, proportion of household members who are women over 60, lower caste households and minority religion households.

Next, we re-estimate the equations augmented by the vector of control variables, using instrumental variable estimation. This aims to address any potential bias induced by unobservables that may affect both the level of total household expenditure and the budget share allocated to a particular service. Total household expenditure, the potentially endogenous variable, is a proxy for permanent income of the household. Hence, in this context, a valid instrumental variable is one that is significantly correlated with permanent income but one that does not affect the budget share allocated to a particular service in any way except through its effect on permanent income. According to economic theory, permanent income of a household is a function of physical capital, labour and human capital. Unfortunately, the dataset does not provide information on the number of workers within a household and level of education of the household head is already included as a control variable in our regression model. Given these constraints, we use the following two variables to instrument for the level of total household expenditure: land owned by the household and a dummy variable which equals one if any member of the household is a regular salary earner. Given that the latter is available only in survey for 2004-05, the instrumental variable regressions are carried out only for that sample.

Table 10 shows that the Engel curve estimated for aggregate services using the instrumental variable method does not make any difference to the sign or statistical significance of the coefficient on the level of total household expenditure. This also holds true for each of the six service categories in any of the (see Appendix Tables 9 to 14).

Table 10
Dependent Variable: Proportion of Household Expenditure Spent on Services

Explanatory Variable ↓	All-India (2004-05)	Rural (2004-05)	Urban (2004-05)
Log of Household Expenditure	0.152*** [0.00531]	0.147*** [0.00695]	0.140*** [0.0122]
Constant	-0.94*** [0.0341]	-0.91*** [0.0442]	-0.88*** [0.0799]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.578 [0.4473]	0.247 [0.6192]	0.558 [0.4551]

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

In fact, in some cases, the size of the coefficients on the level of total household expenditure increases in the instrumental variable specification for each of the seven equations relative to the standard Tobit model. This implies that measurement error in the endogenous variable outweighs any potential upward bias caused by unobservables that affect both the level of total household expenditure and the household budget share allocated to a particular service. Of course, the reliability of these results depends on whether our chosen instrumental variables meet the instrument relevance and exogeneity criteria. The instrument relevance condition is met in each of the seven Engel curve equations with a first-stage F-statistic that is significant at the 1 per cent level of significance. The instrument exogeneity condition, however, is not met in two cases: the Engel curve estimate for entertainment services and communication services. Hence, the results from the instrumental variable estimation are valid for services in the aggregate, education services, health services, personal services and transport services.

C. Marginal Effects

In regressing the household budget share allocated to each type of service and services in the aggregate on the total expenditure of the household and set of control variables, we found that the coefficient on the former, $\hat{\beta}$, is greater than zero. This estimation of Engel curve-type relationships led us to conclude that each services category under consideration and services in the aggregate represent a luxury or superior good. However, because the Tobit model involves a non-linear transformation of the dependent variable, coefficients cannot be viewed as the true estimates of the marginal effect of an explanatory variable on the dependent variable. In fact, the marginal effect is always smaller than the coefficient as the former is obtained by multiplying the latter by an adjustment factor which lies strictly between zero and one. Hence, a $\hat{\beta}$ that is close to zero may actually result in a marginal effect which is less than zero. And this could alter the classification of a service category from being a luxury good to being a necessity.

Given the above, we compute marginal effects which represent the true effect of total expenditure or income of the household on the budget share allocated to each type of service. We consider two estimates of marginal effect. First, there is the expected value of the dependent variable, conditional on it being censored at a lower bound zero. Second, there is the unconditional expected value of the dependent variable, which equals its expected value when it is greater than zero multiplied by the probability of it being greater than zero. Hence, the second marginal effect takes into account people who initially spend

nothing on a particular service as well those are initially spending something on that service. Table 11 and Table 12 show that that the marginal effect of the level of total expenditure of the household on the budget share allocated to services in the aggregate is positive for the sample of 2004-05 and 1993-94 respectively. The result holds true for the all-India sample, rural areas and urban areas. Moreover, the marginal effects (both conditional and unconditional) are positive for each category of services as well (see Appendix tables 15 to 21 for the sample of 2004-05 and Appendix Tables 43 to 49 for the sample of 1993-94). This confirms our earlier finding that services in the aggregate and each category of services under consideration can be classified as superior, or luxury, goods.

Table 11
Dependent Variable: Log of Household Expenditure on Aggregate Services (2004-05)

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.048	0.039	0.057	0.064	0.053	0.075

Table 12
Dependent Variable: Log of Household Expenditure on Aggregate Services (1993-94)

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.021	0.018	0.022	0.030	0.026	0.031

However, it can be seen from the results that for each service category, the marginal effect of an increase in total expenditure on the household budget share allocated to a particular service is higher for urban areas relative to rural areas. This may be due to the following reasons. First, due to better education and awareness, households in urban areas may also have stronger preferences to buy different services, all of which are luxury goods. Second, households in urban areas may have better access to several services such as education, health and transport due to greater availability.

While the graphical representation of the Engel curves and the marginal effects described above lead us to classify each service category as a luxury good, there are some interesting differences between the different services. In particular, while being positively sloped, the Engel curves for personal services and entertainment services are relatively flat. It is also reflected in the extremely small marginal effects of an increase in total household expenditure on the budget share allocated to these two services. This may be attributable to preferences of individuals. For personal services and entertainment services, it may be the

case that as incomes increase, households begin to purchase certain consumer durables that substitute for services they earlier purchased in the market. For example, washing machines and irons may reduce the demand for *dhobis* (individuals who provide laundry services), ready-made garments may reduce the demand for tailors, home theatre systems may reduce the demand for cinema tickets, purchase of CD's and DVD's may reduce their hire, and the purchase of a video game system may replace a day out to a picnic. It is reasonable to assume that as income or expenditure increases, the proportion of total expenditure spent on this service increases only by very little as relatively unskilled services provided by servants, tailors, sweepers, washer men etc is unlikely to be very costly. Similarly, for entertainment services, it is also reasonable to assume that as income or expenditure increases, the proportion of total expenditure spent on this service increases only by very little as going to the cinema, going for picnics or hiring video cassettes and CDs is unlikely to be very costly.

D. Non-Linearities

As explained earlier in the chapter, a section of the recent literature on the subject highlights the possibility of non-linearity in Engel curves. In order to capture any non-linear impact of total expenditure on the household budget share allocated to different services, we augment our previous regression equations that were estimated using Tobit by adding a squared term. Specifically, we estimate the following regression equations:

$$SERVICESPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$EDUPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$HEALTHPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$ENTPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$PERSONALPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$COMMPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

$$TRANSPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma [\log(TOTALEXP_i)]^2 + \gamma X + \varepsilon_i$$

First and foremost, Table 13 shows that the coefficient on the log of total expenditure-squared term is greater than zero in the Engel curve for services in the aggregate. This holds true for the all-India sample, rural areas and urban areas, both in 2004-05 and in 1993-94. It implies that the Engel curve for services in the aggregate is convex going upwards (see figure 8 for the all-India sample). Hence, there is a consistent increase in the household budget share allocated to services as the total income or expenditure increases,

which implies that services in the aggregate is a luxury good at all levels of income. This is an important result for explaining the rising importance of the services sector in India.

Table 13

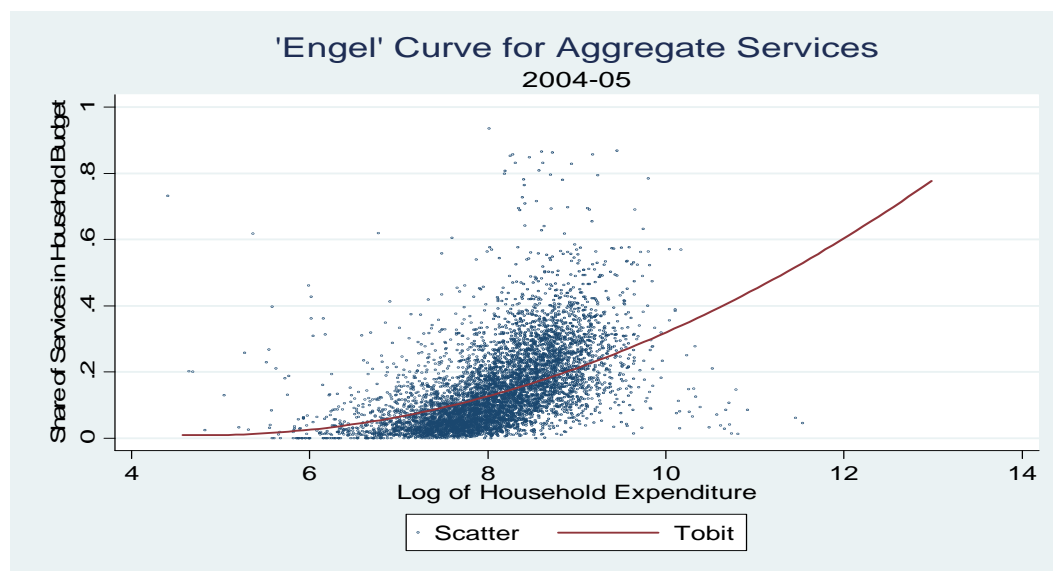
Dependent Variable: Proportion of Household Expenditure Spent on Services

Explanatory Variable ↓	All-India (2004-05)	Rural (2004-05)	Urban (2004-05)	All-India (1993-94)	Rural (1993-94)	Urban (1993-94)
Log of Household Expenditure	0.002 [0.0065]	0.037*** [0.0080]	-0.006 [0.011]	-0.010 [0.0039]	0.0042 [0.0040]	-0.033 [0.0074]
Log of Household Expenditure Squared	0.004*** [0.0004]	0.001*** [0.0005]	0.005*** [0.0007]	0.003*** [0.0003]	0.002*** [0.0002]	0.005*** [0.0004]
Constant	-0.189*** [0.026]	-0.302*** [0.032]	-0.193*** [0.047]	-0.0304** [0.015]	-0.0624*** [0.016]	0.0519* [0.028]
Vector of Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	124640	79295	45345	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Figure 8



Using the quadratic specification described above, we derive non-linear Engel curves for each of the six different categories of services as well (see Appendix Tables 23 to 28 for the sample of 2004-05 and Appendix Tables 51 to 56 for the sample of 1993-94). Graphical representations of these Engel curves,

for the all-India sample are presented below (see Figures 8 to 14). The corresponding Engel curves for rural areas and urban areas are not notably different in terms of shape. They are not reported for the sake of space. Furthermore, corresponding Engel curves for the survey of 1993-94 are also not reported as they are not notably different from those for the survey of 2004-05.

Figure 9

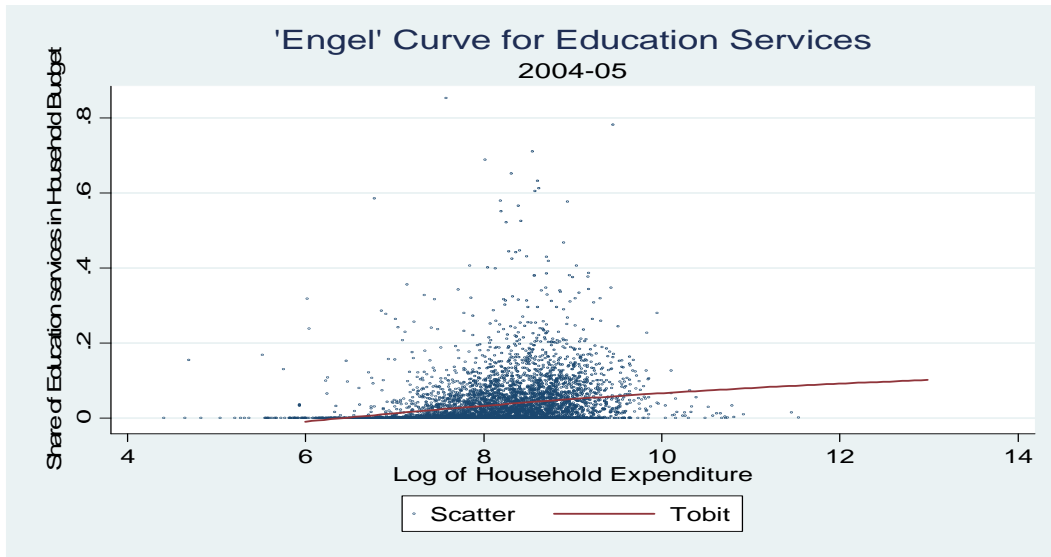


Figure 10

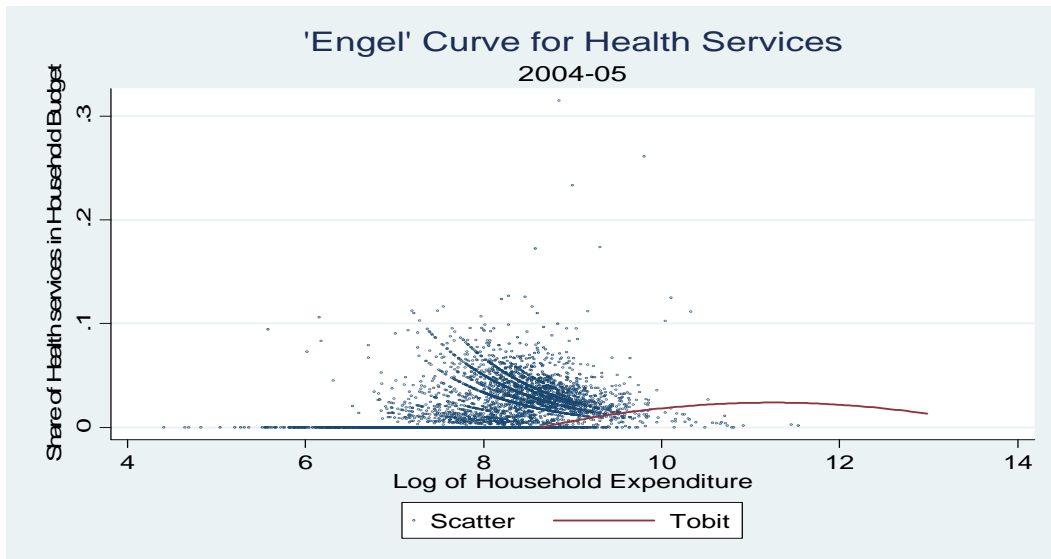


Figure 11

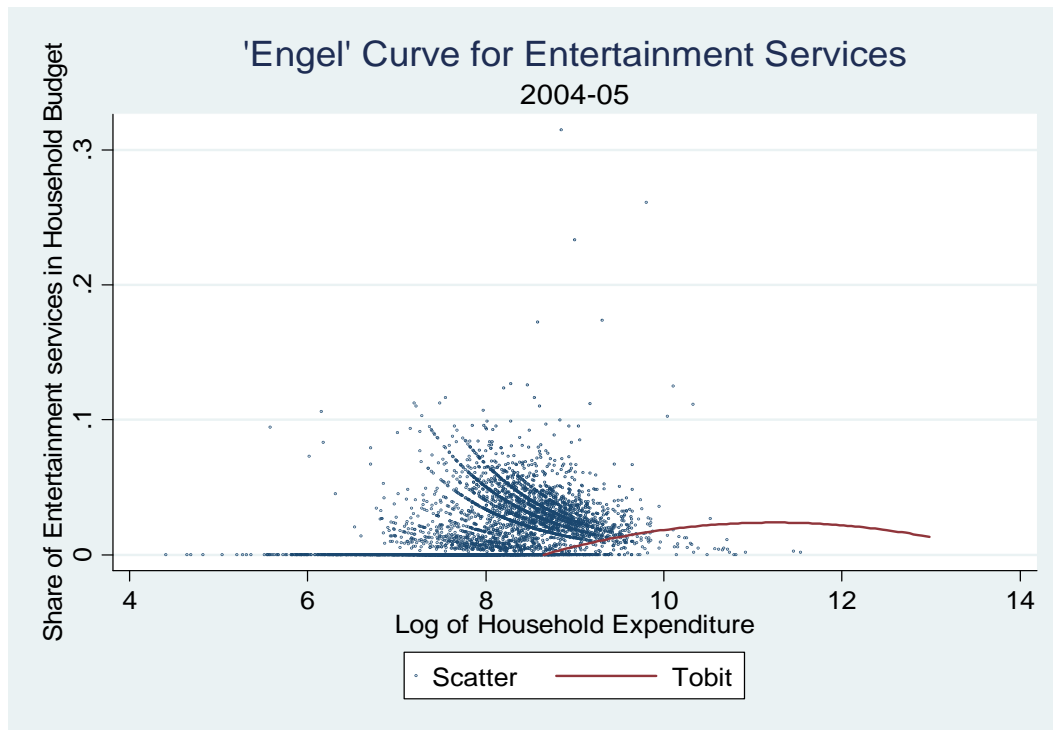


Figure 12

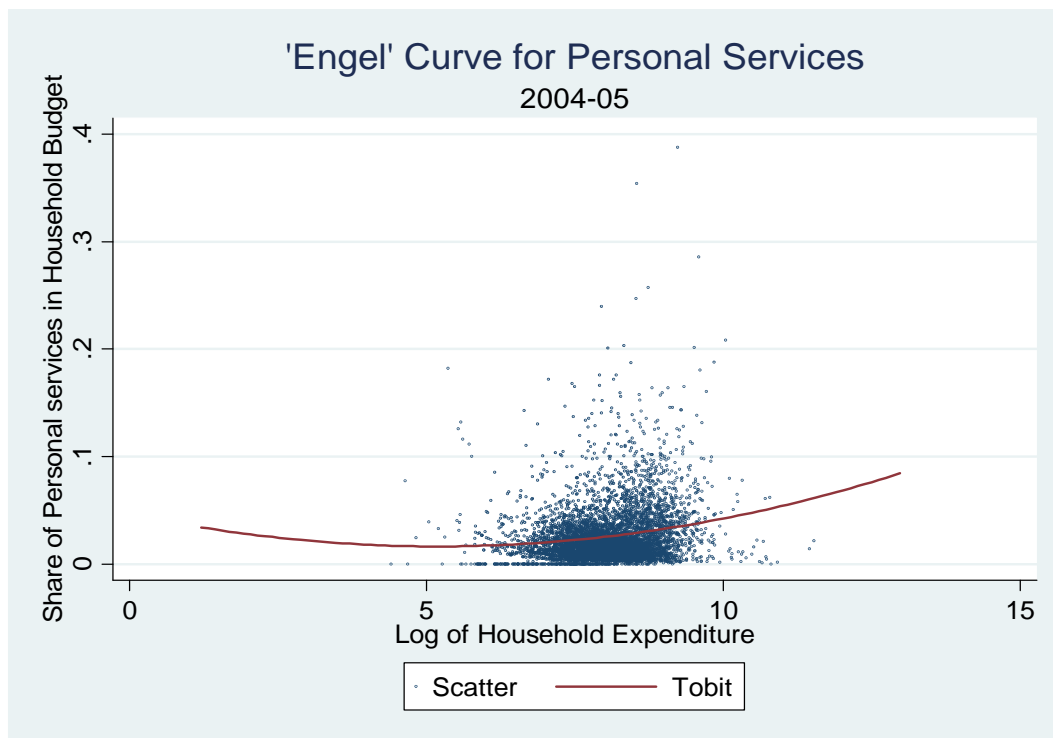


Figure 13

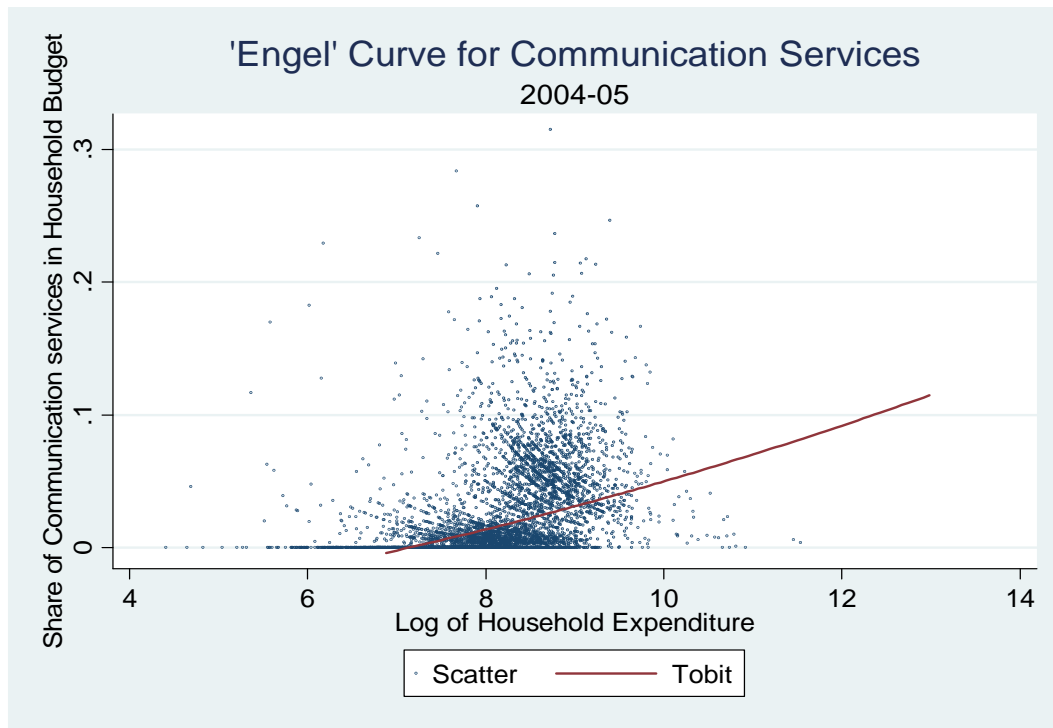
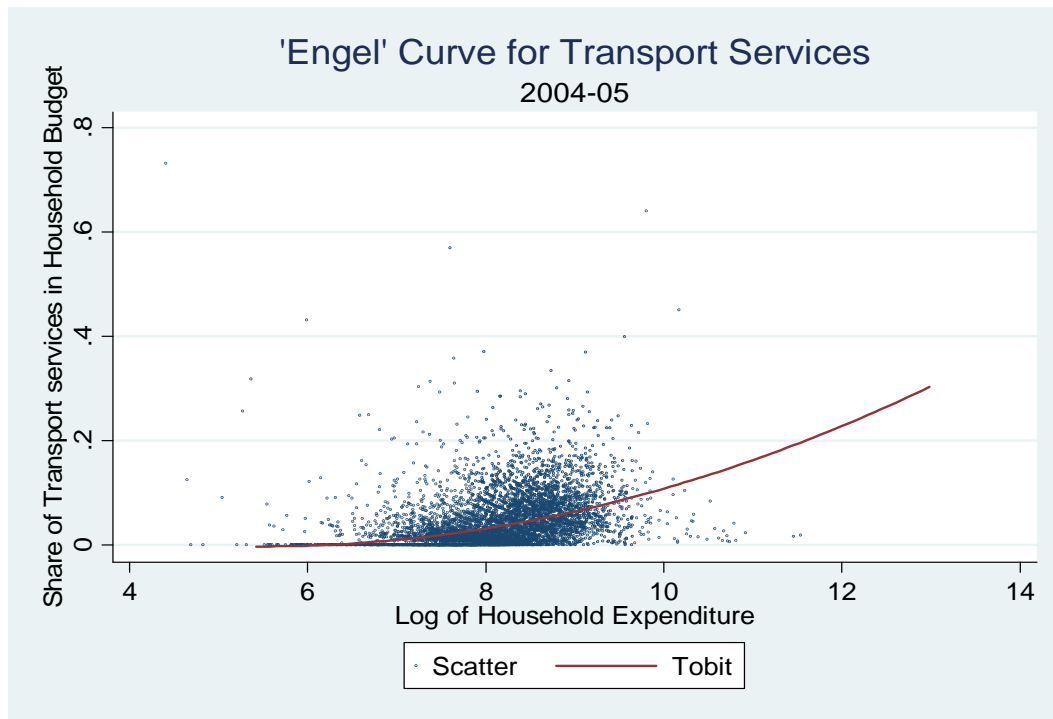


Figure 14



Similar to the case of aggregate services, the Engel curve for transport services is also convex going upwards while the Engel curve for communication services approximates a linear trajectory⁴. This implies that these two categories of services are luxury goods at all levels of income, i.e. there is a consistent increase in household budget share allocated to these services as the total income or expenditure increases.

In contrast, we find a U-shaped Engel curve for personal services, i.e. it is convex going upwards after an initial decline. This implies that as income or expenditure increases initially, there is a modest decline in the household budget share devoted to purchasing personal services. This initial decline is counter-intuitive and difficult to explain. However, it can be seen from the graph (see figure 10) that the initial decline in the household budget share devoted to purchasing personal services is driven by outliers, i.e. there are a negligible number of households before the threshold level of expenditure after which the household budget share devoted to personal services begins to increase. In particular, the lowest fitted value of the household budget share allocated to personal services is 0.02, which corresponds to the logarithm of total expenditure that equals 5.2. In a sample of 124,644 households, a mere 163 households have a lower level of total household expenditure. After this threshold level of total expenditure, however, the household budget share devoted to personal services shows a consistent increase. This is only to be expected and reinforces our earlier finding that personal services are a luxury good.

For the other three categories of services, Engel curves are characterised by non-linearities that deserve explanation. The curvatures of the Engel curves may lend an interesting insight to interpreting these demand relationships. Let us analyse them, in turn.

Engel curves for education and health services are concave going upwards. This suggests that as incomes or expenditure increases initially, there is marked increase in the household budget share devoted to purchasing education and health services. However, after a certain threshold level of expenditure, the household budget share devoted to education and health starts declining. It may be argued that as incomes increase, education and health services become necessities because education is an important determinant of securing a good job, while health status has an important influence on quality of life. At the same time, it is more likely that as incomes increase, people will continue to spend large proportion of their income on these services because they will want to purchase higher quality education and health services.

⁴ For the survey of 1993-94, the Engel curve for communication services is convex going upwards for the sample of urban areas only

However, it can be seen from the graphs (see figures 9 and 10) that the concave shape of these Engel curves is being driven by outliers, i.e. there are a negligible number of households beyond the threshold level of expenditure after which the household budget share devoted to education and health services begins to decline. In particular, the peak fitted value of the household budget share allocated to education services is 0.07, which corresponds to the logarithm of total expenditure that equals 10.8. In a sample of 124,644 households, only 110 households have a higher level of total household expenditure. Similarly, the peak fitted value of the household budget share allocated to health services is 0.04, which corresponds to the logarithm of total expenditure that equals 9.5. In a sample of 124,644 households, only 286 households have a higher level of total household expenditure.

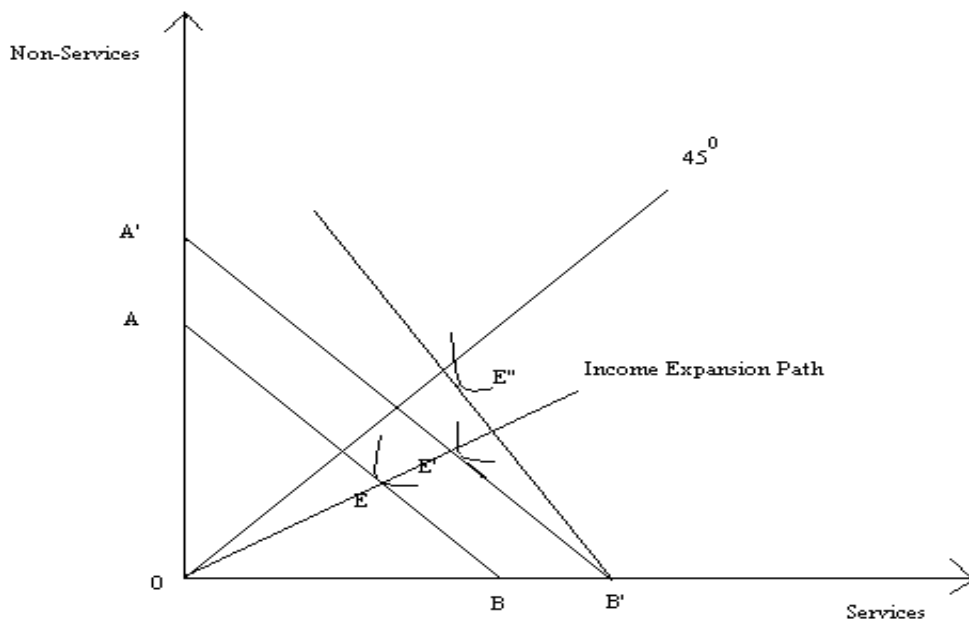
Similarly, we find that the Engel curve for entertainment services is slightly concave going upwards as well. Initially, as income rises, the household budget share spent on entertainment services rises. However, after a certain threshold level of total household expenditure, the budget share spent on entertainment services begins to decline. This decline may be due to two reasons. First, as we move the higher end of the income distribution, expenditure on entertainment activities such as cinema, theatre, photography is likely to be a very small proportion of total expenditure. Second, richer households are likely to purchase consumer durables which provide entertainment services similar to those that were purchased earlier. For example, households may purchase home theatre systems that substitute for going to the cinema. At the same time, it is important to note that there are a negligible number of households beyond the threshold level of expenditure after which the household budget share devoted to entertainment services begins to decline. In particular, the lowest peak value of the household budget share allocated to entertainment services is 0.02, which corresponds to the logarithm of total expenditure that equals 11.2. In a sample of 124,644 households, a mere 37 households have a higher level of total household expenditure.

In sum, we find that the Engel curve for services in the aggregate, personal services and transport services are convex going upwards while that for communication services is not characterised by any non-linearity. On the other hand, Engel curves for education services, health services and entertainment services are concave going upwards. However, this is a result of outliers, i.e. certain households with very high levels of total expenditure. Hence, in these cases, linear Engel curves are a good approximation of the true relationship.

E. Price Effects

In the literature, much like income elasticities of demand, price elasticities of demand are also used to distinguish between luxury goods and necessity goods. In particular, luxuries like cars tend to have high price elasticities of demand while necessities like salt tend to have low price elasticities of demand. Hence, in addition to income variation, price variation may affect the quantity demanded of particular good, which, in turn, may affect the household budget share allocated to that particular good. For instance, figure 15 shows that if prices are constant, an increase in total household or expenditure implies that we move from E to E' (budget line shifts outwards from AB to A'B', i.e. in a parallel way). There is an income effect that equals EE', but no price or substitution effect. However, if services become relatively more expensive over time (as learnt from the experience of developed countries), we will move from E to E'', where E'E'' measures the price or substitution effect.

Figure 15



Importantly, our estimation of Engel curves for aggregate services for six specific categories of services has been restricted to a cross-sectional analysis for two points in time: 1993-94 and 2004-05. This implies that, much like the rest of the literature, we assume prices as given in a particular time period. Unfortunately, we cannot analyse changes over time because the consumption data we use does not cover the same households over the eleven year period. At the same time, in making a comparison between 1993-94 and 2004-05, it may be argued that household budget share allocated to services in latter is

higher on account of rising relative prices of services. However, Table 14 shows that during the period from 1993-94 to 2004-05, the price of services has not risen significantly, relative to both industry and agriculture. This implies that increasing relative prices of services is not an important explanation for the increasing share of the services sector in total output.

Table 14: Prices Index Numbers

Year	Agriculture	Manufacturing	Industry	Services
1993-94	100	100	100	100
1994-95	110	111	111	109
1995-96	112	120	121	118
1996-97	131	125	127	127
1997-98	144	129	135	134
1998-99	155	137	146	145
1999-00	161	139	148	152
2000-01	163	146	154	158
2001-02	167	150	158	165
2002-03	179	154	164	169
2003-04	185	161	172	174
2004-05	173	173	186	190

Source: Estimates based on National Accounts Data, Central Statistical Organisation

8. Model Specification and Results: Censored Quantile Regressions

Next, we estimate Engel curves for services in the aggregate and for the six categories of services using censored quantile regressions (see Appendix Tables 29 to 35 for the survey of 2004-05)⁵. As highlighted earlier, this is useful for two reasons. First, if the error term is heteroscedastic or non-normally distributed, Tobit models do not give consistent parameter estimates [Wooldridge, 2002]. Second, censored quantile regressions permit an analysis of the differential impact of a rise in total income or expenditure on the budget share allocated to a particular good or service across high, and low, conditional consumption households.⁶

⁵ Corresponding censored quantile regressions for the survey of 1993-94 are in the process of being estimated and will be included.

⁶ The previous section showed that any non-linear effect of the level of total household expenditure on the household budget share allocated to any of the six service categories is driven by outliers. Hence, we do not include an expenditure-squared term in these regressions.

$$SERVICESPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$EDUPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$HEALTHPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$ENTPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$PERSONALPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$COMMPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

$$TRANSPROP_i = \alpha_i + \beta \log(TOTALEXP_i) + \gamma X + \varepsilon_i$$

In addition to the scatter points, there are fitted regression lines in each of the six figures to follow (see Figures 16 to 22 for the all-India sample). These lines correspond to the 35th, 50th, and 85th percentiles of the distribution of the budget share allocated to a particular service conditional on the logarithm of household expenditure and the following control variables: household size, age of the household head, gender of the household head, level of education of the household head, household composition in terms of different age-sex categories, and dummy variables for social group and religion of households. **The** choice of using the 35th and 85th percentiles along with the median is determined by the following. First, we use the 35th percentile as opposed to the 25th percentile because given the large number of zeros in the dataset, the 25th percentile of the distribution of the budget share allocated to most service categories is zero. Second, we use the 85th percentile rather than the 75th percentile as the former is further away from the median and hence highlights the differences between the medium, and high, conditional consumption households better.

All three lines are present only in the figures for education services, personal services and transport services. For communication services, there is no fitted line for the 35th percentile. And for health services and entertainment services, there is no fitted line for the 35th or 50th percentile. The absence of these estimated regression lines is attributable to the presence of a large number of zeros in the data for consumption expenditure on these services, i.e. until a certain level of total expenditure or income, households spend nothing on these services. In order to facilitate a comparison of Engel curves between different quantiles for health services and entertainment services, we include a fitted line for the 75th percentile of the distribution of the budget share allocated to these two service categories.

Figure 16

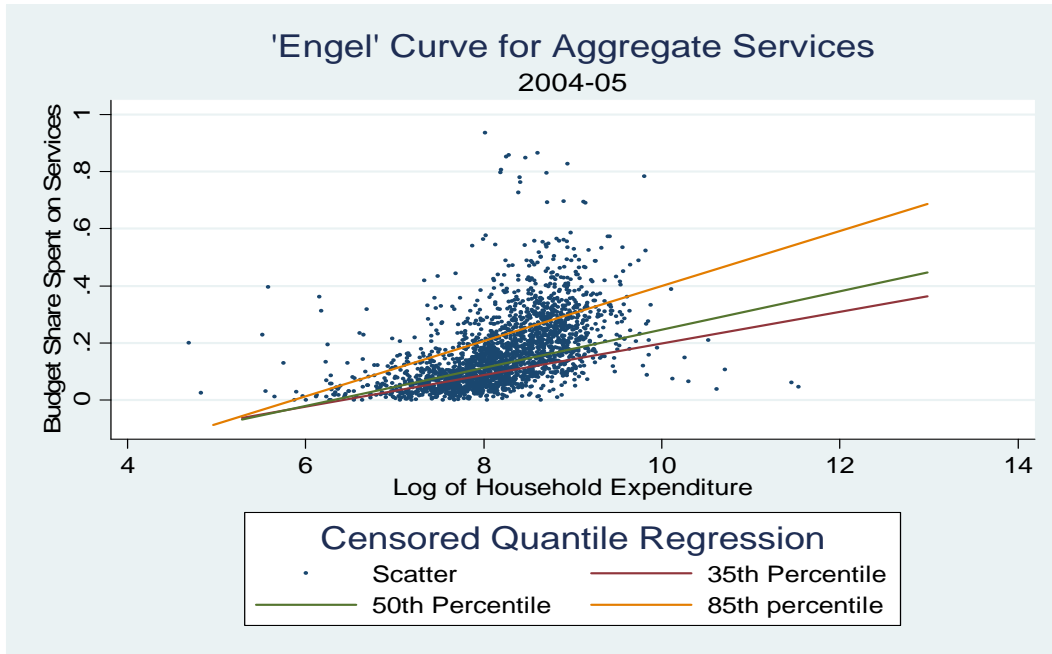


Figure 17

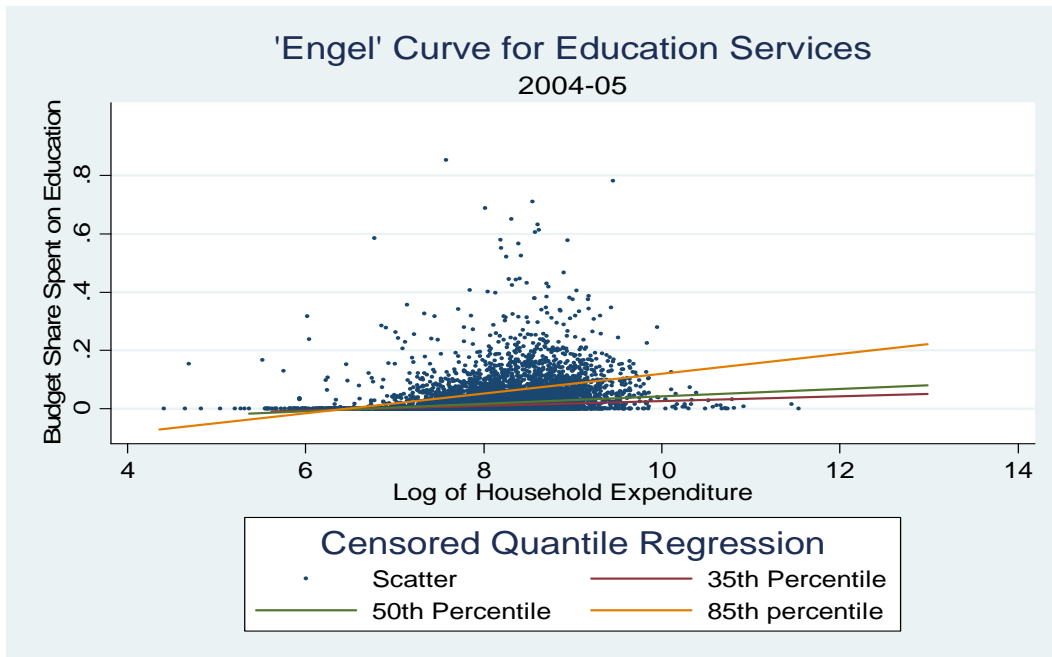


Figure 18

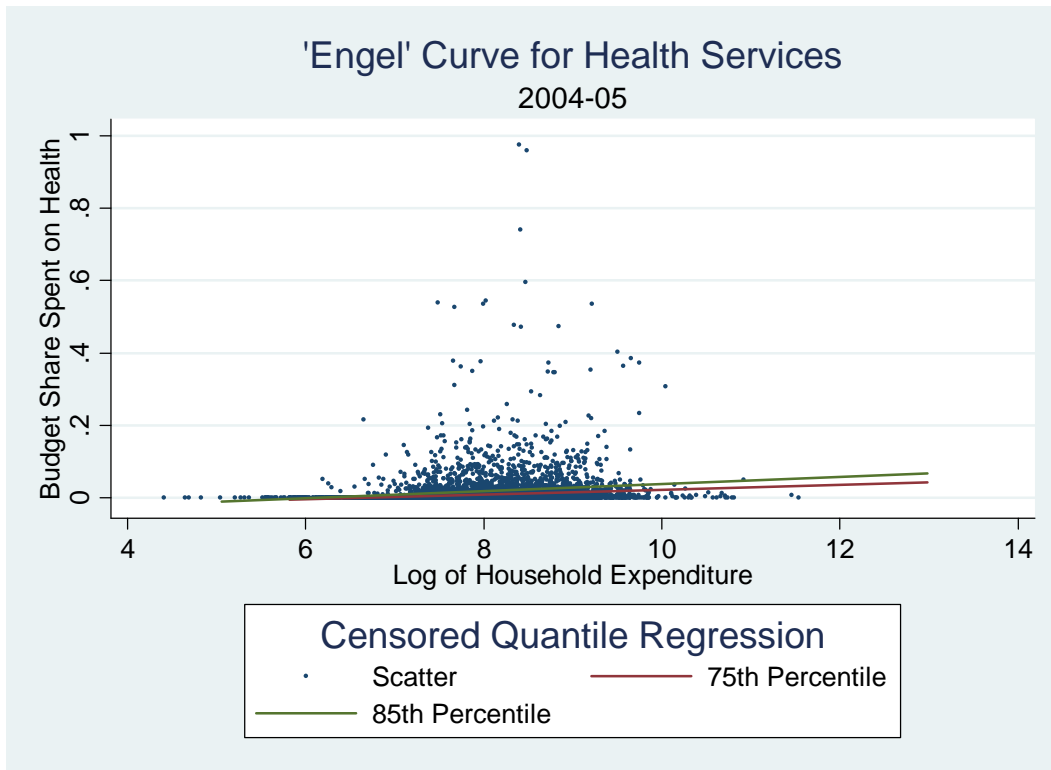


Figure 19

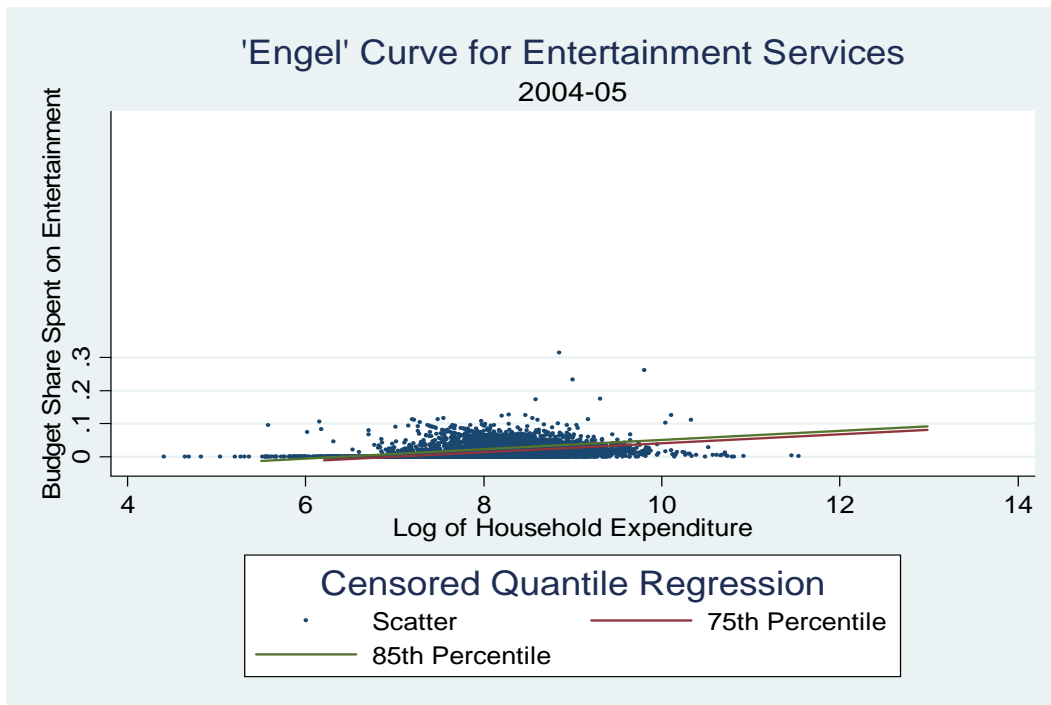


Figure 20

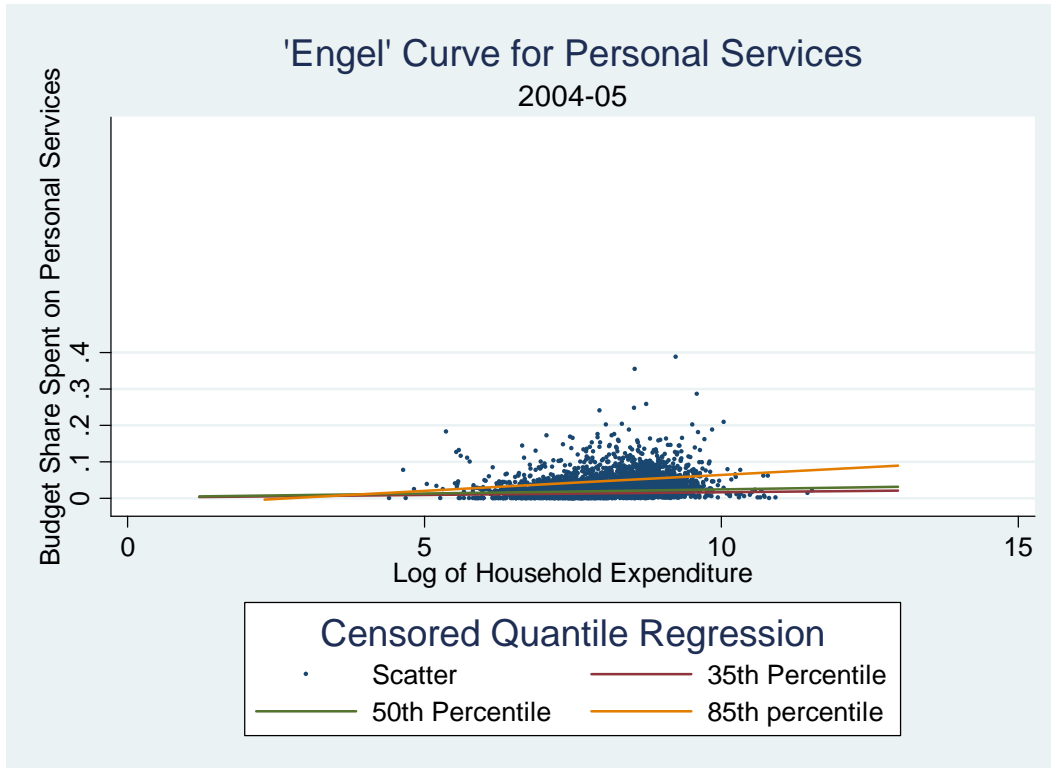


Figure 21

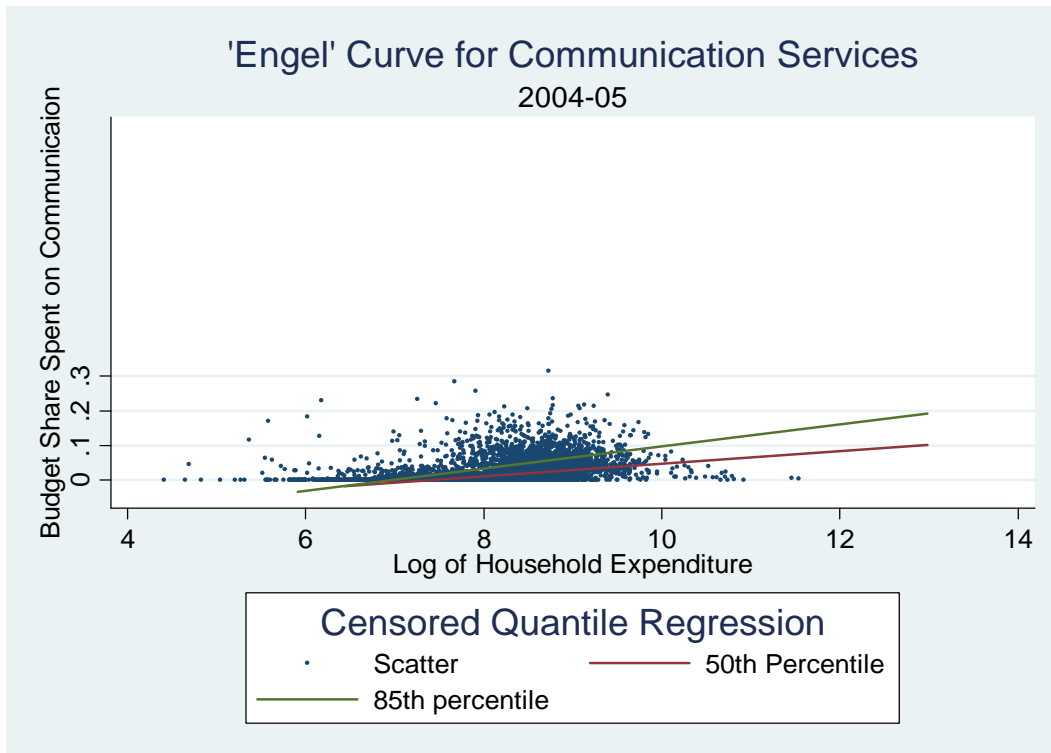
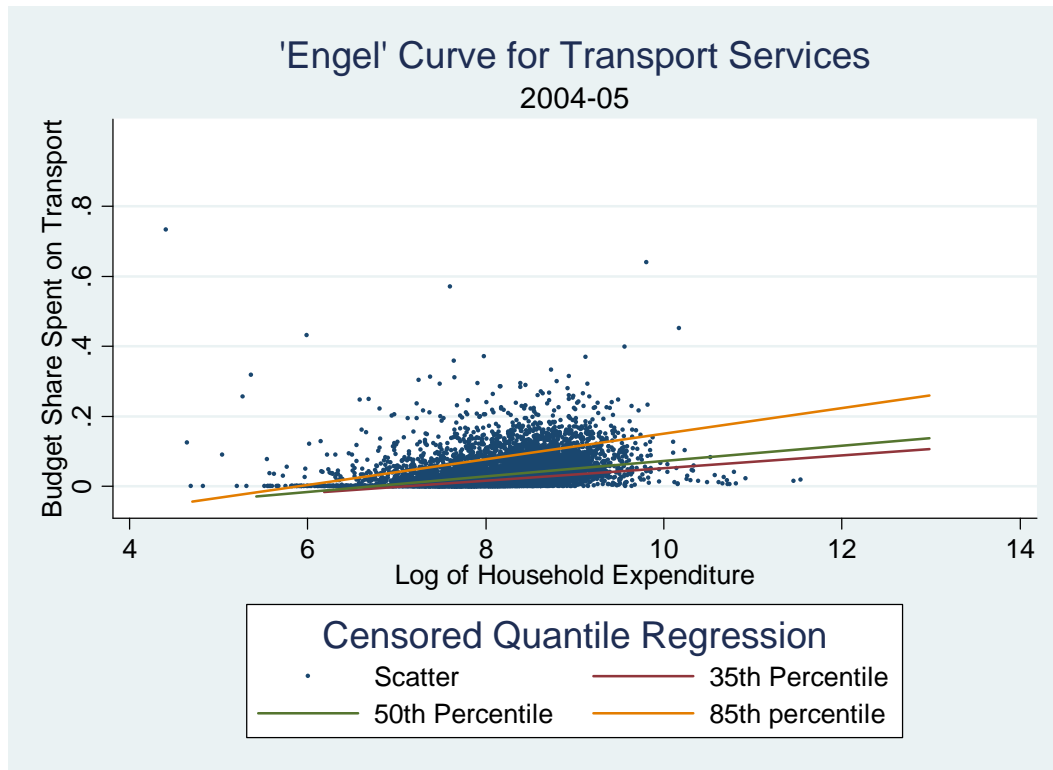


Figure 22



It is evident from the above figures that Engel curves for each percentile of the distribution of the budget share allocated to services in the aggregate, education services, health services, entertainment services, personal services, communication services, transport services and services in the aggregate are upward sloping, i.e. these services are luxuries or superior goods. This reinforces the results from our Tobit estimation. The corresponding curves for rural areas and urban areas are broadly similar, but not reported for the sake of space.

The graphs for the different service categories show that the relationship between the household budget share allocated to a particular service and the level of total household expenditure is different for high, and low, conditional consumption households. In particular, for each of the six service categories, the Engel curve for a higher quantile lies above that for a lower quantile. This implies that the increase in the household budget share allocated to a particular service increases more for high conditional consumption households relative to low conditional consumption households, as total household expenditure increases. Given that household size, age-sex composition of households, social group and religion, age of household head, gender of household head and level of education of household head are controlled for, this greater increase for high-consuming household is explained by the residual terms which may

represent tastes, preferences and location of households. Moreover, the graphs reveal the tendency of the dispersion of the household budget share allocated to a particular service to increase along with its level as household expenditure increases, i.e. the slope of the Engel curve for higher quantiles is steeper. For instance, for services as a whole, 35th and 85th percentiles of the conditional distribution are much further apart among richer than poorer households. This implies that those with more to spend in total devote a good deal more of their budgets to services, but that there is also more dispersion of tastes among them.

In the case of education services, personal services and transport services, we have fitted lines for the 35th percentile, 50th percentile and 85th percentile. They show that for households which have a relatively high conditional consumption of these services, the effect of a rise in total expenditure on the budget share allocated to these services is significantly larger than that for households that have a relatively low conditional consumption of these services. The above finding may be interpreted to mean the following. First, for education services, it is the households with a very high consumption of education services that value quality of education and hence pay significantly larger amounts for it. Second, for personal services, it may be the case that the households with a very high consumption of personal services care more for both quantity and quality. For example, with an increase in total income, households spending a substantial amount on hiring domestic servants, cooks and sweepers may begin to spend significantly more on personal services by further hiring washer men, ironing men and beauticians. This reflects a premium on leisure. At the same time, high-consuming households may care about the quality of certain personal services such as legal and accountancy services and therefore be willing to pay significantly larger amounts for it. Third, for transport services, there are a number of possibilities. For travel purposes, households who have high consumption of transport services may care more about their mode of transport which determines comfort and convenience. Hence, with an increase in total income, bus journeys may be replaced by more expensive train journeys and train journeys may be replaced by more expensive flights. Moreover, within rail and air travel, people may move up from standard to premier class. On the other hand, people who travel extensively within cities for the purpose of work may replace their bus or auto-rickshaw journeys by more expensive taxi journeys or by higher fuel costs of their own cars for their own comfort and convenience.

For communication services, we have fitted lines for the 50th percentile and for the 85th percentile, but not for the 35th percentile. This is attributable to a significant number of households who do not spend anything on these services. The Engel curve for the 85th percentile lies above that for the 50th percentile. This may be explained by the fact that high-consuming households care more about the quality of

communication services. For instance, with an increase in total income, consumers who write several letters may begin to use the local public call-office and those who use public call-office booths intensively may get their own landline or mobile telephone connection. For health services and entertainment services, there are no fitted lines for the 35th and 50th percentiles. This is attributable to a large number of households who do not spend anything on these services. For the purpose of enabling a comparison in the relationship between the household budget share allocated to these services and total household expenditure between different quantiles, we estimate Engel curves for the 75th percentile. For both health services and entertainment services, the Engel curve for the 85th percentile lies marginally above that for the 75th percentile. Unfortunately, however, a comparison between Engel curves for the 85th percentile and the 75th percentile is not very useful as they both represent high-consuming individuals. But we cannot choose a lower percentile, the 60th for instance, as households up to even this percentile spend nothing on these services. Even so, the fact that the effect of a rise in total expenditure on the budget share allocated to these services is greater for high-consuming households is intuitively plausible. For health services, this may be explained by a premium on high quality services or a shift from publicly provided to privately provided services for people who use these services intensively. For entertainment services, this may be explained by the desire for variety and greater comfort. For example, people who value leisure and spend a significant amount on going to fairs, cinemas and getting a cable television connection may also want to join a club offering sports facilities. At the same time, people who spend a significant amount on going to cinemas and theatres may want better, more expensive seats for their comfort.

In sum, Engel curve estimates using censored quantile regressions reinforce our earlier finding that services in the aggregate and each of the six categories of services under consideration are luxury goods. At the same time, these estimates also reveal that within each services category, there are differences in Engel curves between different quantiles. These may be indicative of heterogeneity in tastes and preferences of high, and low, conditional consumption households.

9. Conclusion

The rapid growth of the services sector in India is now well documented. In order to explore the importance of high expenditure elasticity of demand for services as an explanation for the increasing share of the services sector in total output, we analysed consumption data for a sample of over 120,000 households in India at two points in time: 2004-05 and 1993-94. In doing so, we estimated Engel curve-

type relationships for services in the aggregate and for six types of services: education services, health services, entertainment services, personal services, communication services and transport services.

The nature of consumption data is such that a large number of households report zero expenditure on several services. Hence, estimating these Engel curve-type relationships by Ordinary Least Squares would yield inconsistent parameter estimates. Given this problem, following the empirical literature on Engel curves, we estimated these relationships by two non-linear estimators: Tobit models and censored quantile regression models.

The Tobit estimates revealed upward sloping Engel curves for services in the aggregate and for each category of services under consideration. Given that Engel curves were specified as the relationship between the household budget shares allocated to a particular service and total household expenditure, this implied that aggregate services, education services, health services, entertainment services, personal services, communication services and transport services are all luxury or superior goods, i.e. mirror images of Engel's Law for food. Subsequently, in order to capture any non-linear effect of total income or expenditure on the budget share allocated to different services, we introduced an expenditure-squared term in to our model specifications. We found that Engel curves for aggregate services, transport services and personal services are convex going upwards while that for communication services is entirely linear. This indicates that there is a consistent increase in the household budget share allocated to these services as total expenditure increases, thereby implying that they are luxury goods at all levels of income. In contrast, we found that Engel curves for education services, health services and entertainment services are concave going upwards. This implies that at relatively high levels of income, these services become necessities. However, this result is not robust as the non-linearity was driven by outliers, i.e. few very rich households. In particular, the peak household budget share allocated to these services corresponds to a level of total household expenditure beyond which there only 0.1 per cent of the households in the sample.

The set of results from the Tobit estimation were reinforced by our quantile regression estimates, which revealed upward sloping Engel curves for all categories of services and for services in the aggregate. Moreover, these results showed that as total household expenditure increases, the increase in the household budget share allocated to a particular service increases more for high conditional consumption households relative to low conditional consuming households.

In sum, Engel curve-type relationships established for six types of services and for services in the aggregate using household consumption data reveal that services take up a larger share of household budgets as incomes or expenditures increase. This rigorous micro-econometric analysis lends credence to the view that high income elasticities of demand for services are an important explanation for the increasing importance of the services sector in India. Unfortunately, we cannot carry out any time-series analysis while estimating these Engel curves as surveys on consumer expenditure carried out by India's National Sample Survey Organisation do not cover the same households over time. At the same time, we can make a basic time series argument using averages over the two cross-sections. The following table shows the change in total household expenditure per capita and the change in percentage of household expenditure spent on services, in terms of means, from 1993-94 to 2004-05.

Table 15: Some Time-Series Evidence

	Mean (1993-94)	Mean (2004-05)
Percentage of Household Expenditure spent on Aggregate Services	10.5 %	12.7 %
Total Household Expenditure Per Capita (nominal terms) (Rupees per month)	432	852
Total Household Expenditure Per Capita (real terms) (Rupees per month)	384	455

Source: Own Estimates

These estimates reveal that during the period from 1993-94 to 2004-05, both mean household expenditure per capita and mean percentage of household expenditure spent on services has increased. This supports the results of our cross-sectional econometric analysis. At the same time, we also showed during the period from 1993-94 to 2004-05, prices of services have not risen significantly, relative to both industry and agriculture. This implies that increasing relative prices of services is not an important explanation for a rise in household budget shares allocated to services or for the increasing share of the services sector in total output.

Appendix

Engel Curves: Tobit Model (2004-05)

Table 1

Dependent Variable: Proportion of Household Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0729***	0.0560***	0.0862***	0.0769***	0.0653***	0.0862***	0.0717***	0.0594***	0.0827***
	[0.00056]	[0.00068]	[0.0010]	[0.00072]	[0.00090]	[0.0013]	[0.00075]	[0.00094]	[0.0013]
Constant	-0.452***	-0.332***	-0.536***	-0.459***	-0.387***	-0.521***	-0.459***	-0.384***	-0.540***
	[0.0045]	[0.0053]	[0.0082]	[0.0062]	[0.0074]	[0.011]	[0.0083]	[0.011]	[0.014]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 2

Dependent Variable: Proportion of Household Expenditure Spent on Education Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0561***	0.0504***	0.0588***	0.0460***	0.0384***	0.0512***	0.0458***	0.0358***	0.0527***
	[0.00051]	[0.00061]	[0.00093]	[0.000649]	[0.000790]	[0.00115]	[0.000680]	[0.000841]	[0.00119]
Constant	-0.467***	-0.421***	-0.487***	-0.529***	-0.449***	-0.613***	-0.538***	-0.442***	-0.637***
	[0.0042]	[0.0049]	[0.0077]	[0.00658]	[0.00775]	[0.0119]	[0.00818]	[0.0103]	[0.0139]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 3

Dependent Variable: Proportion of Household Expenditure Spent on Health Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
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Log of Household Expenditure	0.0589***	0.0606***	0.0567***	0.0738***	0.0789***	0.0675***	0.0743***	0.0837***	0.0682***
	[0.00094]	[0.0012]	[0.0015]	[0.00122]	[0.00162]	[0.00196]	[0.00128]	[0.00173]	[0.00202]
Constant	-0.590***	-0.603***	-0.573***	-0.638***	-0.674***	-0.587***	-0.780***	-0.884***	-0.702***
	[0.0077]	[0.010]	[0.013]	[0.0107]	[0.0138]	[0.0174]	[0.0159]	[0.0242]	[0.0230]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 4

Dependent Variable: Proportion of Household Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0216***	0.0175***	0.0184***	0.0235***	0.0208***	0.0194***	0.0223***	0.0205***	0.0178***
	[0.00021]	[0.00027]	[0.00029]	[0.00025]	[0.00034]	[0.00036]	[0.00025]	[0.00034]	[0.00036]
Constant	-0.188***	-0.161***	-0.148***	-0.199***	-0.194***	-0.156***	-0.193***	-0.193***	-0.148***
	[0.0017]	[0.0022]	[0.0024]	[0.00237]	[0.00322]	[0.00335]	[0.00284]	[0.00402]	[0.00388]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 5

Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0061***	0.0041***	0.0090***	0.0064***	0.0044***	0.0088***	0.0057***	0.0034***	0.0081***
	[0.00011]	[0.00014]	[0.00020]	[0.00015]	[0.00018]	[0.00026]	[0.00015]	[0.00019]	[0.00026]
Constant	-0.023***	-0.007***	-0.046***	-0.026***	-0.016***	-0.037***	-0.037***	-0.022***	-0.051***
	[0.00090]	[0.0011]	[0.0016]	[0.00130]	[0.00156]	[0.00234]	[0.00172]	[0.00223]	[0.00288]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes

Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345
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Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 6

Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0358***	0.0298***	0.0357***	0.0343***	0.0318***	0.0334***	0.0330***	0.0308***	0.0323***
	[0.00024]	[0.00031]	[0.00037]	[0.00027]	[0.00036]	[0.00043]	[0.00028]	[0.00037]	[0.00043]
Constant	-0.295***	-0.253***	-0.284***	-0.261***	-0.251***	-0.246***	-0.266***	-0.257***	-0.254***
	[0.0020]	[0.0025]	[0.0031]	[0.00247]	[0.00316]	[0.00393]	[0.00309]	[0.00423]	[0.00468]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 7

Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0305***	0.0275***	0.0347***	0.0321***	0.0322***	0.0349***	0.0283***	0.0288***	0.0322***
	[0.00025]	[0.00031]	[0.00043]	[0.00031]	[0.00040]	[0.00054]	[0.00032]	[0.00040]	[0.00055]
Constant	-0.212***	-0.187***	-0.245***	-0.218***	-0.216***	-0.241***	-0.189***	-0.190***	-0.219***
	[0.0020]	[0.0025]	[0.0035]	[0.00276]	[0.00338]	[0.00491]	[0.00354]	[0.00462]	[0.00589]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

**Engel Curves: Instrumental Variables Tobit Model
(2004-05)**

Table 8
Dependent Variable: Proportion of Household
Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.152*** [0.00531]	0.147*** [0.00695]	0.140*** [0.0122]
Constant	-0.94*** [0.0341]	-0.91*** [0.0442]	-0.88*** [0.0799]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.578 [0.4473]	0.247 [0.6192]	0.558 [0.4551]

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 9
Dependent Variable: Proportion of Household
Expenditure Spent on Education Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0944*** [0.0041]	0.0851*** [0.0055]	0.0892*** [0.0091]
Constant	-0.827*** [0.027]	-0.740*** [0.035]	-0.845*** [0.060]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.013 [0.9108]	0.327 [0.5673]	0.638 [0.4245]

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 10
Dependent Variable: Proportion of Household
Expenditure Spent on Health Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0419*** [0.0086]	0.0196* [0.012]	0.0547*** [0.019]
Constant	-0.438*** [0.056]	-0.29*** [0.075]	-0.512*** [0.12]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.675 [0.4114]	0.424 [0.5151]	0.454 [0.5005]

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 11
Dependent Variable: Proportion of Household
Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0522*** [0.00166]	0.0396*** [0.00229]	0.0431*** [0.00310]
Constant	-0.382*** [0.0107]	-0.311*** [0.0146]	-0.306*** [0.0204]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	4.977 [0.0257]	0.366 [0.5454]	12.408 [0.0004]

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 12
Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0027** [0.00109]	0.0028** [0.00141]	0.0022* [0.00257]
Constant	- 0.034*** [0.0069]	- 0.031*** [0.0089]	-0.041** [0.0168]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.410 [0.5220]	0.807 [0.3691]	1.008 [0.2851]

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 13
Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0718*** [0.00224]	0.0900*** [0.00321]	0.0734*** [0.00489]
Constant	-0.471*** [0.0144]	-0.580*** [0.0204]	-0.497*** [0.0321]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	0.495 [0.4816]	1.413 [0.2346]	0.026 [0.8729]

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 14
Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India	Rural	Urban
Log of Household Expenditure	0.0515*** [0.00182]	0.0497*** [0.00245]	0.0356*** [0.00376]
Constant	-0.375*** [0.0117]	-0.365*** [0.0156]	-0.264*** [0.0247]
Vector of Control Variables	Yes	Yes	Yes
Observations	106649	74956	31693
First Stage F-statistic	1308.51 [0.000]	738.79 [0.000]	281.47 [0.000]
Amemia-Lee-Newey minimum chi-squared statistic	11.492 [0.0007]	0.619 [0.4315]	3.991 [0.0458]

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Marginal Effects: Tobit Model (2004-05)

(For specification with control variables included but state dummy variables not included)

Table 15

Dependent Variable: Log of Household Expenditure on Aggregate Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.048	0.039	0.057	0.064	0.053	0.075

Table 16

Dependent Variable: Log of Household Expenditure on Education Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.014	0.011	0.017	0.018	0.014	0.022

Table 17

Dependent Variable: Log of Household Expenditure on Health Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.017	0.016	0.018	0.017	0.017	0.018

Table 18

Dependent Variable: Log of Household Expenditure on Entertainment Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.006	0.004	0.007	0.008	0.005	0.010

Table 19

Dependent Variable: Log of Household Expenditure on Personal Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.004	0.002	0.005	0.005	0.003	0.007

Table 20

Dependent Variable: Log of Household Expenditure on Communication Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.011	0.009	0.013	0.014	0.010	0.019

Table 21

Dependent Variable: Log of Household Expenditure on Transport Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.016	0.015	0.018	0.023	0.022	0.025

Engel Curves: Tobit Model (2004-05), Non-linearities

Table 22

Dependent Variable: Proportion of Household Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.080***	-0.004	0.118***	-0.001	0.037***	-0.014	0.002	0.037***	-0.006
	[0.00660]	[0.00794]	[0.0117]	[0.0066]	[0.0081]	[0.012]	[0.0065]	[0.0080]	[0.011]
Log of Household Expenditure Squared	0.0096***	0.0038***	0.012***	0.0048***	0.0017***	0.0062***	0.0044***	0.0013***	0.0055***
	[0.0004]	[0.0005]	[0.0007]	[0.0004]	[0.0005]	[0.0007]	[0.0004]	[0.0005]	[0.0007]
Constant	0.153***	-0.098***	0.279***	-0.160***	-0.282***	-0.129***	-0.189***	-0.302***	-0.193***
	[0.0263]	[0.0313]	[0.0473]	[0.026]	[0.032]	[0.047]	[0.026]	[0.032]	[0.047]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 23

Dependent Variable: Proportion of Household Expenditure Spent on Education Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.228*** [0.0070]	0.246*** [0.0083]	0.203*** [0.012]	0.180*** [0.0070]	0.162*** [0.0084]	0.224*** [0.012]	0.178*** [0.0070]	0.158*** [0.0084]	0.225*** [0.012]
Log of Household Expenditure Squared	-0.01*** [0.0004]	-0.01*** [0.0005]	-0.01*** [0.0007]	- 0.008*** [0.0004]	- 0.007*** [0.0005]	-0.01*** [0.0007]	- 0.008*** [0.0004]	- 0.007*** [0.0005]	-0.01*** [0.0007]
Constant	-1.16*** [0.029]	-1.20*** [0.034]	-1.07*** [0.051]	- 1.064*** [0.029]	- 0.939*** [0.034]	- 1.312*** [0.051]	- 1.067*** [0.029]	- 0.927*** [0.035]	- 1.336*** [0.051]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 24

Dependent Variable: Proportion of Household Expenditure Spent on Health Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.240*** [0.013]	0.202*** [0.017]	0.305*** [0.022]	0.345*** [0.014]	0.325*** [0.018]	0.365*** [0.023]	0.349*** [0.014]	0.342*** [0.018]	0.364*** [0.023]
Log of Household Expenditure Squared	- 0.011*** [0.0008]	- 0.008*** [0.001]	- 0.015*** [0.001]	- 0.016*** [0.0008]	- 0.015*** [0.0011]	- 0.018*** [0.0014]	- 0.017*** [0.0008]	- 0.015*** [0.0011]	- 0.017*** [0.0014]
Constant	-1.32*** [0.054]	-1.16*** [0.067]	-1.59*** [0.092]	- 1.712*** [0.056]	- 1.639*** [0.071]	- 1.789*** [0.096]	- 1.870*** [0.058]	- 1.898*** [0.075]	- 1.899*** [0.097]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 25

Dependent Variable: Proportion of Household Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.079*** [0.0029]	0.081*** [0.0038]	0.073*** [0.0041]	0.101*** [0.0029]	0.0950*** [0.0039]	0.0923*** [0.0041]	0.0979*** [0.0028]	0.0902*** [0.0037]	0.0936*** [0.0040]
Log of Household Expenditure Squared	-0.003*** [0.0001]	-0.004*** [0.0002]	-0.003*** [0.0002]	-0.005*** [0.0001]	-0.004*** [0.0002]	-0.004*** [0.0002]	-0.004*** [0.0001]	-0.004*** [0.0002]	-0.004*** [0.0002]
Constant	-0.423*** [0.012]	-0.421*** [0.016]	-0.373*** [0.017]	-0.512*** [0.012]	-0.490*** [0.016]	-0.450*** [0.017]	-0.497*** [0.012]	-0.472*** [0.016]	-0.453*** [0.016]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 26

Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.012*** [0.0013]	0.005*** [0.0016]	0.030*** [0.0023]	-0.007*** [0.0014]	0.004** [0.0017]	-0.019*** [0.0024]	-0.008*** [0.0013]	0.002 [0.0016]	-0.020*** [0.0023]
Log of Household Expenditure Squared	0.001*** [0.00008]	-0.0001 [0.0001]	0.002*** [0.0001]	0.0008*** [0.00008]	3.33E-05 [0.0001]	0.0017*** [0.0001]	0.00089*** [0.00008]	9.54E-05 [0.0001]	0.0017*** [0.0001]
Constant	0.0480*** [0.0053]	-0.014** [0.0064]	0.111*** [0.0094]	0.0273*** [0.0054]	0.0142** [0.0066]	0.0750*** [0.0096]	0.0178*** [0.0053]	0.0165** [0.0065]	0.0597*** [0.0095]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 27

Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.087*** [0.0034]	0.128*** [0.0044]	0.045*** [0.0051]	0.134*** [0.0032]	0.166*** [0.0042]	0.0966*** [0.0048]	0.140*** [0.0031]	0.176*** [0.0041]	0.101*** [0.0047]
Log of Household Expenditure Squared	-0.003 [0.0002]	-0.006 [0.0002]	-0.001 [0.0003]	-0.006 [0.0002]	-0.008 [0.0003]	-0.004 [0.0003]	-0.006 [0.0002]	-0.009 [0.0002]	-0.004 [0.0003]
Constant	- 0.505*** [0.014]	- 0.650*** [0.018]	- 0.326*** [0.021]	- 0.658*** [0.013]	- 0.785*** [0.017]	- -0.501*** [0.020]	- 0.696*** [0.013]	- 0.833*** [0.017]	- 0.533*** [0.020]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 28

Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.017*** [0.0030]	0.019*** [0.0038]	-0.060*** [0.0050]	0.010*** [0.0031]	0.044*** [0.0039]	-0.033*** [0.0050]	-3.6E-05 [0.0029]	0.029*** [0.0037]	-0.035*** [0.0049]
Log of Household Expenditure Squared	0.0030*** [0.0001]	0.0005** [0.0002]	0.0059*** [0.0003]	0.0013*** [0.0001]	0.0008*** [0.0002]	0.0042*** [0.0003]	0.0017*** [0.0001]	-2.4E-05 [0.0002]	0.0041*** [0.0003]
Constant	-0.0195 [0.012]	- 0.156*** [0.015]	0.140*** [0.020]	-0.135*** [0.012]	-0.264*** [0.016]	0.0292 [0.020]	0.0792*** [0.012]	- 0.191*** [0.015]	0.048** [0.020]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	124642	79296	45346	124640	79295	45345	124640	79295	45345

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Engel Curves: Censored Quantile Regressions (2004-05)

Table 29

Dependent Variable: Proportion of Household Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure	0.0571***	0.0711***	0.106***	0.0448***	0.0574***	0.0951***	0.0749***	0.0895***	0.114***
	[0.00036]	[0.00040]	[0.00099]	[0.00038]	[0.00045]	[0.00113]	[0.00076]	[0.00077]	[0.00190]
Constant	-0.346***	-0.417***	-0.568***	-0.265***	-0.331***	-0.505***	-0.472***	-0.545***	-0.624***
	[0.00305]	[0.00349]	[0.00822]	[0.00316]	[0.00375]	[0.00916]	[0.00666]	[0.00688]	[0.0162]
Vector of Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	121483	122287	123774	78353	78512	78955	43784	44227	45004

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 30

Dependent Variable: Proportion of Household Expenditure Spent on Education Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure	0.0155***	0.0222***	0.0436***	0.00728***	0.0127***	0.0325***	0.0227***	0.0293***	0.0467***
	[0.00021]	[0.00020]	[0.00037]	[0.00019]	[0.00020]	[0.00034]	[0.00049]	[0.00054]	[0.00089]
Constant	-0.165***	-0.217***	-0.356***	-0.0719***	-0.116***	-0.254***	-0.251***	-0.304***	-0.415***
	[0.0026]	[0.0024]	[0.0038]	[0.00228]	[0.00231]	[0.00353]	[0.0061]	[0.0064]	[0.0088]
Vector of Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43812	61298	98906	31254	40236	62272	19712	25462	37868

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 31

Dependent Variable: Proportion of Household Expenditure Spent on Health Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile

Log of Household Expenditure			0.0165***			0.0189***			0.0140***
			[0.00025]			[0.00032]			[0.00040]
Constant			-0.089***			-0.107***			-0.069***
			[0.0021]			[0.00257]			[0.00344]
Vector of Control Variables			Yes			Yes			Yes
Observations			118786			75199			42746

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 32

Dependent Variable: Proportion of Household Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure			0.0186***			0.0160***			0.00690***
			[0.00018]			[0.00022]			[0.00035]
Constant			-0.117***			-0.110***			-0.0186***
			[0.0017]			[0.00218]			[0.00312]
Vector of Control Variables			Yes			Yes			Yes
Observations			118696			71949			45337

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 33

Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure	0.0006***	0.0015***	0.0097***	-0.00012	0.000164	0.0072***	0.0016***	0.0034***	0.0125** *
	[0.00010]	[0.00012]	[0.00029]	[0.00013]	[0.00015]	[0.00035]	[0.00015]	[0.0002]	[0.00046]
Constant	0.0007	0.0002	-0.025***	0.004***	0.008***	-0.013***	-0.004***	-0.011***	- 0.034***
	[0.00086]	[0.00098]	[0.0023]	[0.00109]	[0.00121]	[0.00283]	[0.00135]	[0.00176]	[0.00383]
Vector of									

Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	124640	124640	124633	79295	79295	79294	45330	45328	45324

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 34

Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure		0.0270***	0.0401***		0.0168***	0.0327***		0.0342***	0.0412***
		[0.00027]	[0.00023]		[0.000222]	[0.000247]		[0.000354]	[0.000428]
Constant		-0.205***	-0.258***		-0.126***	-0.214***		-0.249***	-0.254***
		[0.0026]	[0.0021]		[0.00206]	[0.00217]		[0.00340]	[0.00406]
Vector of Control Variables		Yes	Yes		Yes	Yes		Yes	Yes
Observations		46490	98442		24459	60590		29551	40631

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 35

Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India			Rural			Urban		
	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile	35 th Percentile	50 th Percentile	85 th Percentile
Log of Household Expenditure	0.0193***	0.0239***	0.0421***	0.0160***	0.0205***	0.0438***	0.0262***	0.0317***	0.0445***
	[0.00019]	[0.00020]	[0.00048]	[0.00022]	[0.00025]	[0.00069]	[0.00040]	[0.00041]	[0.00089]
Constant	-0.134***	-0.155***	-0.231***	-0.107***	-0.128***	-0.237***	-0.191***	-0.219***	-0.254***
	[0.0017]	[0.0018]	[0.0042]	[0.00199]	[0.00221]	[0.0058]	[0.00369]	[0.00383]	[0.00814]
Vector of Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	109351	119125	124089	72604	77005	78940	37370	41884	45076

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Engel Curves: Tobit Model (1993-94)

Table 36

Dependent Variable: Proportion of Household Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0375***	0.0280***	0.0377***	0.0393***	0.0337***	0.0394***	0.0369***	0.0315***	0.0382***
	[0.00034]	[0.00034]	[0.00067]	[0.00044]	[0.00045]	[0.00086]	[0.00046]	[0.00046]	[0.00089]
Constant	-0.220***	-0.161***	-0.207***	-0.218***	-0.186***	-0.215***	-0.197***	-0.157***	-0.207***
	[0.0025]	[0.0024]	[0.0050]	[0.0037]	[0.0037]	[0.0074]	[0.0053]	[0.0074]	[0.0090]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 37

Dependent Variable: Proportion of Household Expenditure Spent on Education Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0358***	0.0220***	0.0390***	0.0249***	0.0156***	0.0266***	0.0236***	0.0135***	0.0268***
	[0.00032]	[0.00024]	[0.00065]	[0.00040]	[0.00030]	[0.00080]	[0.00042]	[0.00031]	[0.00083]
Constant	-0.283***	-0.171***	-0.308***	-0.276***	-0.159***	-0.336***	-0.262***	-0.135***	-0.332***
	[0.0024]	[0.0018]	[0.0050]	[0.0040]	[0.0029]	[0.0080]	[0.0051]	[0.0050]	[0.0092]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 38

Dependent Variable: Proportion of Household Expenditure Spent on Health Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of	0.0286***	0.0232***	0.0324***	0.0367***	0.0318***	0.0384***	0.0391***	0.0368***	0.0415***

Household Expenditure									
	[0.00059]	[0.00062]	[0.0011]	[0.00079]	[0.00084]	[0.0015]	[0.00083]	[0.00089]	[0.0015]
Constant	-0.292***	-0.232***	-0.339***	-0.310***	-0.257***	-0.344***	-0.309***	-0.278***	-0.344***
	[0.0045]	[0.0046]	[0.0088]	[0.0066]	[0.0068]	[0.013]	[0.0091]	[0.013]	[0.015]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 39

Dependent Variable: Proportion of Household Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0083***	0.0079***	0.0043***	0.0091***	0.0086***	0.0061***	0.0105***	0.0099***	0.0079***
	[0.00017]	[0.00022]	[0.00024]	[0.00022]	[0.00029]	[0.00032]	[0.00022]	[0.00030]	[0.00033]
Constant	-0.080***	-0.080***	-0.045***	-0.092***	-0.095***	-0.066***	-0.081***	-0.079***	-0.061***
	[0.0013]	[0.0017]	[0.0019]	[0.0020]	[0.0027]	[0.0030]	[0.0025]	[0.0040]	[0.0034]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 40

Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0106***	0.00901***	0.0109***	0.0121***	0.0111***	0.0123***	0.0123***	0.0121***	0.0121***
	[0.00011]	[0.00015]	[0.00018]	[0.00015]	[0.00020]	[0.00024]	[0.00015]	[0.00021]	[0.00024]
Constant	-0.0707***	-0.0607***	0.0704***	0.0799***	0.0791***	0.0750***	0.0818***	0.0862***	0.0753***
	[0.00083]	[0.0011]	[0.0014]	[0.0013]	[0.0017]	[0.0021]	[0.0018]	[0.0033]	[0.0025]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State	No	No	No	No	No	No	Yes	Yes	Yes

Dummy Variables									
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 41
Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.019*** [0.00018]	0.0097*** [0.00015]	0.0213*** [0.00029]	0.0177*** [0.00021]	0.00936*** [0.00019]	0.0217*** [0.00035]	0.0171*** [0.00022]	0.00914*** [0.00019]	0.0206*** [0.00036]
Constant	-0.164*** [0.0014]	-0.0873*** [0.0012]	-0.179*** [0.0023]	-0.139*** [0.0018]	-0.0795*** [0.0016]	-0.161*** [0.0031]	-0.137*** [0.0025]	-0.0749*** [0.0030]	-0.159*** [0.0038]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Table 42
Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0197*** [0.00024]	0.0187*** [0.00028]	0.0181*** [0.00043]	0.0229*** [0.00032]	0.0239*** [0.00038]	0.0214*** [0.00056]	0.0194*** [0.00032]	0.0197*** [0.00038]	0.0196*** [0.00057]
Constant	-0.139*** [0.0018]	-0.131*** [0.0021]	-0.126*** [0.0033]	-0.150*** [0.0027]	-0.153*** [0.0031]	-0.143*** [0.0048]	-0.139*** [0.0037]	-0.131*** [0.0060]	-0.142*** [0.0059]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets
***p<0.01, **p<0.05, *p<0.1

Marginal Effects: Tobit Model (1993-94)

(For specification with control variables included but state dummy variables not included)

Table 43

Dependent Variable: Log of Household Expenditure on Aggregate Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.021	0.018	0.022	0.030	0.026	0.031

Table 44

Dependent Variable: Log of Household Expenditure on Education Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.007	0.004	0.008	0.008	0.005	0.010

Table 45

Dependent Variable: Log of Household Expenditure on Health Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.007	0.006	0.008	0.007	0.006	0.008

Table 46

Dependent Variable: Log of Household Expenditure on Entertainment Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.002	0.001	0.002	0.002	0.001	0.002

Table 47

Dependent Variable: Log of Household Expenditure on Personal Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.005	0.004	0.006	0.007	0.006	0.008

Table 48

Dependent Variable: Log of Household Expenditure on Communication Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.003	0.001	0.005	0.003	0.001	0.005

Table 49

Dependent Variable: Log of Household Expenditure on Transport Services

Explanatory Variable ↓	All-India Conditional Expectation	Rural Conditional Expectation	Urban Conditional Expectation	All-India Unconditional Expectation	Rural Unconditional Expectation	Urban Unconditional Expectation
Log of Household Expenditure	0.009	0.009	0.009	0.012	0.012	0.012

Engel Curves: Tobit Model (1993-94), Non-linearities

Table 50

Dependent Variable: Proportion of Household Expenditure Spent on Services (aggregate)

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.032** *	0.0078*	-0.077***	-0.0048	0.0121***	-0.032***	-0.010***	0.0042	-0.033***
	[0.0040]	[0.0041]	[0.0074]	[0.0040]	[0.0042]	[0.0075]	[0.0039]	[0.0040]	[0.0074]
Log of Household Expenditure Squared	0.0047**	0.0014***	0.0077***	0.0030***	0.0015***	0.0047***	0.0032***	0.0019***	0.0047***
	[0.0002]	[0.0003]	[0.0005]	[0.0003]	[0.0003]	[0.0005]	[0.0003]	[0.0002]	[0.0004]
Constant	0.0302* *	-0.0889***	0.217***	-0.0622***	-0.111***	0.0452	-0.0304**	0.0624***	0.0519*
	[0.015]	[0.015]	[0.027]	[0.015]	[0.015]	[0.028]	[0.015]	[0.016]	[0.028]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 51

Dependent Variable: Proportion of Household Expenditure Spent on Education Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.163*** [0.0045]	0.103*** [0.0034]	0.180*** [0.0088]	0.122*** [0.0044]	0.0750*** [0.0034]	0.143*** [0.0088]	0.111*** [0.0044]	0.0642*** [0.0033]	0.135*** [0.0088]
Log of Household Expenditure Squared	-0.008*** [0.0003]	-0.005*** [0.0002]	-0.009*** [0.0006]	-0.006*** [0.0003]	-0.004*** [0.0002]	-0.007*** [0.0006]	-0.006*** [0.0003]	-0.003*** [0.0002]	-0.007*** [0.0006]
Constant	-0.755*** [0.017]	-0.470*** [0.013]	-0.841*** [0.034]	-0.634*** [0.017]	-0.375*** [0.013]	-0.771*** [0.034]	-0.584*** [0.017]	-0.318*** [0.013]	-0.736*** [0.034]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 52

Dependent Variable: Proportion of Household Expenditure Spent on Health Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.066*** [0.0076]	0.066*** [0.0080]	0.059*** [0.015]	0.095*** [0.0080]	0.096*** [0.0085]	0.065*** [0.015]	0.087*** [0.0081]	0.092*** [0.0085]	0.064*** [0.015]
Log of Household Expenditure Squared	-0.0025** [0.0005]	-0.0029*** [0.0005]	-0.0017* [0.0009]	-0.0039*** [0.0005]	-0.0044*** [0.0006]	-0.0017* [0.0009]	-0.0032*** [0.0005]	-0.0038*** [0.0006]	-0.0014 [0.0010]
Constant	-0.431*** [0.028]	-0.388*** [0.029]	0.438*** [0.055]	-0.522*** [0.030]	-0.484*** [0.031]	0.443*** [0.058]	-0.483*** [0.031]	-0.474*** [0.033]	0.427*** [0.059]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 53

Dependent Variable: Proportion of Household Expenditure Spent on Entertainment Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0136* **	0.0218***	-0.00535**	0.0201***	0.0229***	0.00165	0.0171***	0.0175***	0.00253
	[0.0021]	[0.0028]	[0.0027]	[0.0021]	[0.0029]	[0.0030]	[0.0021]	[0.0027]	[0.0029]
Log of Household Expenditure Squared	-0.0003* **	-0.0009***	0.0006***	-0.0007***	-0.0009***	0.0003	-0.0004***	-0.0005***	0.0004*
	[0.0001]	[0.0001]	[0.0002]	[0.0001]	[0.0002]	[0.0002]	[0.0001]	[0.0002]	[0.0002]
Constant	-0.100** *	-0.131***	-0.00931	-0.133***	-0.147***	-0.0498* **	-0.105***	-0.106***	-0.0410* **
	[0.0077]	[0.010]	[0.010]	[0.0080]	[0.011]	[0.011]	[0.0080]	[0.011]	[0.011]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 54

Dependent Variable: Proportion of Household Expenditure Spent on Personal Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.0079* **	-0.0001	-0.015***	-0.0004	-0.0029	0.0002	-0.0006	-0.0038**	-0.0012
	[0.001]	[0.002]	[0.002]	[0.001]	[0.002]	[0.002]	[0.001]	[0.001]	[0.002]
Log of Household Expenditure Squared	0.0012* **	0.0006** *	0.0017** *	0.0008***	0.0009***	0.0008***	0.0009***	0.0011** *	0.0008***
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0002]	[0.0001]	[0.0001]	[0.0001]
Constant	-0.0033	-0.028***	0.025***	-0.035***	-0.029***	-0.031***	-0.036***	-0.030***	-0.026***
	[0.0049]	[0.0064]	[0.0078]	[0.0051]	[0.0066]	[0.0084]	[0.0052]	[0.0071]	[0.0083]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 55

Dependent Variable: Proportion of Household Expenditure Spent on Communication Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	-0.0011	0.010***	-0.022***	0.015***	0.014***	0.009**	0.015***	0.013***	0.008**
	[0.0022]	[0.0019]	[0.0033]	[0.0021]	[0.0018]	[0.0037]	[0.0021]	[0.0018]	[0.0037]
Log of Household Expenditure Squared	0.0013* **	-4E-05	0.003***	0.0001	-0.0003***	0.0008***	0.0001	-0.0002**	0.0007***
	[0.0001]	[0.00012]	[0.00022]	[0.00014]	[0.00012]	[0.00024]	[0.00014]	[0.00012]	[0.00024]
Constant	- 0.0874* **	- 0.0895** *	- -0.0137	- 0.130***	- -0.0971***	- -0.112***	- 0.131***	- 0.0888***	- -0.113***
	[0.0082]	[0.0070]	[0.013]	[0.0080]	[0.0067]	[0.014]	[0.0082]	[0.0071]	[0.014]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

Table 56

Dependent Variable: Proportion of Household Expenditure Spent on Transport Services

Explanatory Variable ↓	All-India	Rural	Urban	All-India	Rural	Urban	All-India	Rural	Urban
Log of Household Expenditure	0.0386* **	0.0443***	0.0162** *	0.0612***	0.0591***	0.0487***	0.0482***	0.0451***	0.0457***
	[0.0030]	[0.0036]	[0.0052]	[0.0031]	[0.0037]	[0.0056]	[0.0030]	[0.0036]	[0.0054]
Log of Household Expenditure Squared	- 0.0013* **	- 0.0018***	- 0.0001	- 0.0026***	- 0.0024***	- 0.0018***	- 0.0019***	- 0.0017***	- 0.0017***
	[0.0002]	[0.0002]	[0.0003]	[0.0002]	[0.0002]	[0.0004]	[0.0002]	[0.0002]	[0.0004]
Constant	- 0.208** *	- -0.223***	- 0.119***	- -0.287***	- -0.276***	- -0.243***	- -0.242***	- -0.220***	- -0.238***
	[0.011]	[0.013]	[0.020]	[0.011]	[0.013]	[0.021]	[0.011]	[0.014]	[0.021]
Vector of Control Variables	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy Variables	No	No	No	No	No	No	Yes	Yes	Yes
Observations	115192	69119	46073	115192	69119	46073	115192	69119	46073

Note: Standard errors in brackets

***p<0.01, **p<0.05, *p<0.1

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