## 8

# Engel Curve Modeling: Analysis of the Consumption Pattern of the Poor Households in Metro Manila 

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The National Capital Region (NCR), better known as the Metropolitan Manila Area or Metro Manila, is the country's premier region. Not only is Metro Manila the most progressive among the regions of the country, it is also the most densely populated. Metro Manila, which is composed of 17 highly urbanized cities that are geographically segmented into four contiguous districts, has traditionally been regarded as the country's center of commercial, political, educational, and economic activities. Not to mention its being the seat of the national leadership. Its generally affluent inhabitants, who according to the 2007 population census reached close to 11.6 million people (living in an area of $636 \mathrm{~km}^{2}$ for a very high population density of 18,157 persons per square kilometer), are enjoying the highest purchasing power and standard of living among the different regions of the country.

However, despite the general affluence of Metro Manila inhabitants, like all regions of the country, it also has its share of the urban poor or those who barely meet the basic necessities of life. It is in Metro Manila that the contrast between the rich and the poor is exceptionally glaring. This study attempts to uncover the consumption pattern of the urban poor in Metro

Manila through econometric modeling of the budget households allocate to the different consumption items necessary to meet living standards, in relation to their spending capability, household composition, location in the metropolis, and other demographic characteristics. The public use file of the 2009 Family Income and Expenditure Survey (FIES) for Metro Manila constitutes the database of the study, focusing on sample households belonging to the lowest $20 \%$ of the regional income distribution, which in this study is presumed to constitute the poor segment of the population.

## Problem Statement/Policy Issue and Its Importance

The central issue in this study is the conduct of an in-depth descriptive and econometric analysis of the consumption pattern of Metro Manila urban poor across household composition, demographic, social, and locational categories of households, to provide policy makers with invaluable inputs in establishing poverty outline and other descriptive measures that may help local and national authorities in profiling the poor situated within these classifications for focused intervention targeting. An important valueadded characteristic of this research is the incorporation of the complex survey design features of the FIES to improve estimates of parameters and standard errors that will be used in the descriptive analysis and econometric modeling to be done. Explicitly, the main problem addressed in this research is, "How do the urban poor of Metro Manila allocate their meager resources to meet basic human requirements in light of their demographic and other attributes?"

## Theoretical and Operational Framework

The most important microeconomic concept used in empirical modeling of household budgets is that of Engel curves. This concept was named after Ernst Engel, a 19th-century Prussian statistician who conducted one of the earliest studies of household expenditure patterns. In a series of budget studies, he theorized that food expenditures take a steadily declining share of income as income of the family becomes larger. He also posited that clothing and housing take a constant share of the income regardless of its size, while education, health, transportation, recreation, and saving take larger percentage allocation as income of the family increases (Engel, 1857). These empirical regularities came to be known in the literature as the classical Engel's Law, and the mathematical equation linking income (or spending) to the budget share of a good is called Engel curve of the good. In a family
budget, there are as many Engel curves as there are goods in the family's market basket.

Engel curves are a systematic way of summarizing and describing the development of household budgets as material resources increase (Deaton \& Case, 1987). In the microeconomic theory of consumer behavior, an Engel curve pertains to the income or expenditure expansion path of demand for a particular consumer good under constant prices (Varian, 2005). In its most basic form, an Engel curve represents a mathematical relationship of the proportion of the budget allocated for a good (budget share) as a function of the household income (or by the total expenditure under the nonsatiety assumption of the theory).

It is however simplistic to assume that variation in budget allocation for the different consumption items is explained solely by variation in household income (or expenditure). The presence of children in the household will definitely affect budget allocation for certain items children are heavy users of (e.g., education, clothing, and footwear). Gender of the household head and so with the age and other demographic characteristics of the household may also impact the budget allocation process.

In this study, it is postulated that the data provided by the Metro Manila sample belonging to the first two regional income deciles (households whose total income is at the bottom $20 \%$ of all Metro Manila households, which constitute the "Poor" segment) contain the necessary information that may reveal their budget allocation process-hence their consumption pattern. The choice of using the first and the second regional income deciles to identify the poor is due to the 2009 poverty incidence of $20.9 \%$ for the Philippines (Virola, 2011) which is closely approximated by the $20 \%$ figure. The empirical model that subscribes to the theoretical tenets of microeconomics is formulated accordingly this way: letting $\varpi_{i}=$ the budget share of the $i$ th consumption category in the consumption basket, and $M=$ total household expenditure (proxy for disposable income) or total household income.

## The Basic Engel Curve

The basic form of the Engel curve for the $i$ th consumption items takes the following empirical form popular in the literature as the Working-Leser Engel curve (Working, 1943; Leser, 1963):

$$
\begin{equation*}
\varpi_{i}=\alpha_{i}+\beta_{i} \ln (M)+u_{i} \text { for } i=1,2, \ldots, k \tag{1}
\end{equation*}
$$

where $k$ is the total number of mutually exclusive consumption categories in the household's budget, $\alpha_{i}$ and $\beta_{i}$ are parameters to be estimated, and $u_{i}$ is
a random disturbance term that is assumed to have zero mean and constant variance, generally independent across sample households and not related to $M$.

In order for this function to be empirically plausible, the adding-up restriction must be met in the parameter estimation, that is,

$$
\begin{equation*}
\sum_{i=1}^{k} \varpi_{i}=1 \text { that is possible only when } \sum_{i=1}^{k} \alpha_{i}=1 \text { and } \sum_{i=1}^{k} \beta_{i}=0 \tag{2}
\end{equation*}
$$

Note that the above restrictions can be satisfied when ordinary least squares (OLS) estimation of the model's parameters is implemented independently on an equation-by-equation basis. Hence, under the basic Working-Leser Engel curve model, adding up is not a cross-equation restriction that usually messes up the parameter estimation. In this study, separate Engel curves will be constructed and analyzed for $M=$ total household expenditure and $M=$ total household income. When total household expenditure is used, budget shares are the proportion of the total expenditure accounted for by the $i$ th consumption item, while budget shares are deemed to be the proportion of the total household income allocated for the various items $M$ is income. Additionally, in the income Engel curves, household savings is assumed to be a distinct consumption category.

## Augmented Engel Curves with Demographic and Locational Dummies

The basic form of the model can easily be adjudged to be overly simple, bordering on being a crude approximation of reality. Since different household characteristics are posited earlier to influence budget decisions of households, we can modify the basic model by augmenting it with household composition as well as demographic and locational dummy variables. In this way, we can empirically determine and assess the significance of the differential impact of these supposedly relevant factors on the budget shares of the various consumption categories.

The form of the Engel curves that will serve as our means of testing our a priori expectations and theoretical predictions take the following form (known as the Augmented Working-Leser Engel curves):

$$
\begin{equation*}
\varpi_{i}=\alpha_{i}+\beta_{i} \ln (M)+\sum_{j=1}^{a} \gamma_{i j} \eta_{j}+\sum_{j=1}^{b} \psi_{i j} D E M_{j}+\sum_{j=1}^{c} \phi_{i j} \text { DISTRICT }_{j}+u_{i} \tag{3}
\end{equation*}
$$

where $\varpi_{i}, \alpha_{i}, \beta_{i}, M$, and $u_{i}$ are the same as before,
$a=$ number of age-specific household composition variables
$b=$ number of demographic characteristics dummy variables
$c=$ number of Metro Manila district dummy variables
$\eta_{j}=$ number of household members belonging to the $j$ th age category
$D E M_{j}=1$ if sample household belongs to the $j$ th demographic category, 0 if otherwise
$\operatorname{DISTRICT}_{j}=1$ if sample household belongs to the $j$ th Metro Manila district, 0 if otherwise

To make model (3) subscribe to the adding-up requirement of the theory, it is necessary for the following to be met in the parameter estimates:

$$
\begin{equation*}
\sum_{i=1}^{k} \alpha_{i}=1 \quad \sum_{i=1}^{k} \beta_{i}=0 \quad \sum_{i=1}^{k} \gamma_{i j}=0 \quad \sum_{i=1}^{k} \psi_{i j}=0 \quad \text { and } \quad \sum_{i=1}^{k} \varphi_{i j}=0 \tag{4}
\end{equation*}
$$

It is to be noted however that when OLS estimation is applied for each equation in isolation, there is no way we can incorporate the above constraints; hence, it is imperative that we employ simultaneous equation system estimation, with facility to handle cross-equations a priori restrictions. In this study, the Full Information Maximum Likelihood (FIML) estimation is seen to provide the best results under the adding-up constraints (4). As an alternative, the Iterative SURE, by virtue of its being an asymptotic FIML, can likewise be used, provided that the solution converges.

## Incorporating the Sampling Design of the Survey in Inference

It has been one of the goals of this study to compute parameter estimates of the models together with the necessary descriptive measures and standard errors with full consideration of the complex design of the survey. This is made clear at the onset since the proponent would like to distinguish this study from most statistical investigations that employ survey data. More often than not, statistical inferences in most of these researches are done with the assumption that the data collection is undertaken using simple random sampling (SRS) without replacement, with the elements of the target population having equal chance of being included in the sample. Although computationally convenient, this procedure is theoretically flawed when complex design was used in the survey (Deaton, 1997; Korn \& Graubard, 1999).

The FIES in particular employs a multistage stratified sampling design aimed at economizing on the sample size without sacrificing the precision of the sample representation. As a consequence, each population element has different probabilities of inclusion in the sample. As such, there is a need
to take into consideration the use of sampling weights (sometimes called raising factors), which represent the inverse of the selection probabilities for each sample element (Cochran, 1977). These sampling weights are needed to correct for differential representation and the effect of the sampling design on the estimates and their respective standard errors (Deaton, 1997). This will ensure the unbiasedness and consistency of the estimates, resulting in better inference.

An important by-product of the adjustment process called the design effect (Deff) is generated for each design-consistent estimate. This statistic represents the ratio of the variance of the estimate (using the complex design) and the variance under a hypothetical survey conducted under the SRS sampling without replacement and with the same number of elements as in the complex survey (Kish, 1965). Stratification tends to reduce Deff below 1.0 while clustering tends to increase it above 1.0 (Deaton, 1997; Kish, 1995). A design effect above 1.0 may seem to be pointing to the relative undesirable of the complex design vis-à-vis SRS on the basis of efficiency; however, survey designers have to take into consideration various factors in designing surveys (e.g., costs and timeliness of the results). All things being equal, a simple random sample gives the most efficiency per observation collected. Oftentimes however, important considerations dictate that samples not be taken strictly at random (Wolter, 2007).

The adjustment process to incorporate the complex design of the 2009 FIES in all of the estimation and statistical inferences procedures implemented in the study is automated using the STATA Ver. 11 software through the various commands and macros known collectively as "svy commands." Such a suite of commands is well suited for all researchers who use survey data in their analyses and wanted to "do it right," that is, to avoid the consequences of using SRS-based estimation and inference procedures that may lead to misleading results.

## Identifying the Poor Households

Due to the multifaceted nature of poverty, identifying the individuals who are in such a state has become a matter of conjecture. In the Philippines, there are a number of estimates for an indicator known as the "poverty line" or "poverty threshold"-an income cutoff point that represents the "minimum acceptable standard of welfare that separates the poor from the non-poor" (ADB, 2009). The government, multilateral organizations, and private entities employ different poverty lines, which vary significantly in any given reference period. During the year 2009, the official poverty threshold using the approved poverty estimation methodology announced by NSCB is

P16,841 per capita income, which when used for the entire Philippines puts the poverty incidence at 20.9\% (Virola, 2011). For international comparison, multilateral organizations either use the $\$ 1-\mathrm{a}$-day or the $\$ 1.25$-a-day standards as the threshold. The Social Weather Stations (SWS) employs the "self-rated poverty indicator," which in the second quarter of 2009 stood at $50 \%$ (ADB, 2009). The methodology of the Annual Poverty Indicator Survey (APIS) identifies the poor as those belonging to lower $40 \%$ of the income distribution (NSO, 2009). Balisacan (2003) on the other hand, proposed a spatially consistent poverty threshold that varies across time and space, which at the moment has no updated figure for NCR available yet.

In the present study, the official poverty incidence of $20.9 \%$ in 2009 is used to identify the poor, which roughly corresponds to the bottom $20 \%$ (lowest quintile) of the regional income distribution of the NCR. When the P16,841-per-capita threshold is to be used, only 57 of the Metro Manila 2009 FIES sample of 4,285 will be classified as poor, defeating the purpose of the study. Hence, due to the asymptotic nature of the econometric estimation methodology to be employed as well as to come up with a more robust descriptive estimates, it is deemed necessary to use the more "realistic" system of identifying the poor as those households belonging to the first two regional income deciles resulting in a working sample of 854 households.

## Conceptual Framework

The classical microeconomic theory of consumer demand behavior has it that the basic determinant of the budget share formation of consumers is the total income available at their disposal (Varian, 2005). It is to be expected that the higher the income of the consumer, the higher would be the allocation proportion that they would assign to those items they can do without when they are poorer. Moreover, during situations of relative poverty, families tend to put higher priorities to items that are considered to be of basic importance to their survival, like food, utilities, clothing, and shelter.

It is however simplistic to assume that consumption varies exclusively with income of the household. Some other characteristics could decidedly impact on the budget allocation process. For one, the presence of schoolaged members could influence the budget shares for education, food, clothing and footwear, and transportation and communication, among other consumption items. Having nonrelatives, particularly family friends and household helps, could create a dent on the household budget in terms of allocation to household operations, nondurables, and other related items. In short, household composition should be taken into consideration in the modeling process.

Households also vary extensively in their demographic characteristics. Consequently, such variation can be manifested in the manner they form their household budget. We can postulate that variables such as, gender, age, educational attainment and employment status of the household head, and the type of family may be considered as logical determinants of consumption behavior of the family. Location of the household in the metropolis may also play a role in family budgeting.

Presented in Figure 1 is the conceptual framework paradigm of the study. It simply shows the interrelationships of the various components-database, models, inference techniques, estimation procedures, basic outcomes, and the possible policy implications of the results.


Figure 1. Conceptual Fframework diagram

## The Variables and How They are Prepared for Analysis

The main concern of the analysis are the budget shares for the different consumption categories that are used and conceptually presented in the operational definitions of the 2009 FIES. Two different kinds of budget shares are generated: the shares of total household expenditures and the shares of total household income devoted to each of the 19 consumption items. For the income budget share, an additional category of budget is used, which is that of household savings. For each of these sets of budget shares for each household, the total is 1 by construction. It has to be emphasized that in
this study, the average share of each item pertains to the sample average for the item, that is, for the $i$ th consumption item: $\bar{\sigma}_{i}=\frac{\sum_{j} w_{j} \omega_{i}}{\sum_{j} w_{j}}$, with $w_{j}$ is the weight of the sample household, in contrast to the ${ }_{j}$ aggregate budget share concept (Deaton \& Case, 1997), which the NSO has adopted in its published figures. The formula for this concept is $\frac{\bar{w}_{i}=}{\sum_{i} w_{j} c_{y} / \sum_{l} w_{j}} \sum_{i} \sum_{j} c_{i}$
sample households.

## Income and Expenditure Elasticities

Among the most important parameters of economic relationships essential in research is the concept of elasticity. In this study, both the income and expenditure elasticities of consumption of each of the various consumption categories. In budget studies like Engel curve analysis, income or expenditure elasticities may be used as a basis of categorizing the various items of consumption into necessity, luxury, or inferior. Obtaining estimates for these coefficients in the present study may reveal important insight into how the urban poor of the Metropolis consider the various items.

Using the Basic Working-Leser Engel curve model (1), a general elasticity formula can be derived by considering that the budget share $\varpi_{i}$ may be represented as the ratio of the unit price times the quantity of the commodity consumed by the household and the total consumption or total income.

Given the model $\varpi_{i}=\frac{p_{i} q_{i}}{M}=\alpha_{i}+\beta_{i} \ln (M)$, the income/expenditure elasticity for the $i$ th consumption item which is denoted by $\varepsilon_{i}$ can be derived as

$$
\begin{equation*}
\varepsilon_{i}=\frac{\partial \ln q_{i}}{\partial \ln M}=1+\frac{\beta_{i}}{\varpi_{i}} \tag{5}
\end{equation*}
$$

Evaluation of the elasticities is undertaken at the mean budget share $\bar{\varpi}_{i}$ using the empirically determined parameter $\widehat{\beta}_{i}$ (the coefficient of the natural logarithm of income or natural logarithm of expenditure).

In this study, both the income and expenditure elasticities of the different consumption items are estimated. In estimating the income elasticities, household savings is considered as one of the items families allocate budget for. Hence, a design-based estimate for savings elasticity of household income will be one of the distinct outputs of the study.

## Review of Related Literature

The earliest account in the literature of empirical modeling of complete system of demand equation was the contribution of Leser (1941) using family budget data of a cross-section of Australian households. Prior to Leser, the early history of empirical demand analysis is characterized by the extensive use of single-equation methodology centered on measurement of elasticities (e.g., Schultz, 1938). After Leser, it took a decade for another researcher to come up with another application of the complete system approach. This happened when Stone (1954) published an empirical implementation of the linear expenditure system (LES) to British consumption data. This publication marked the beginning of a slow but steady flow of research concerning the application of the theory of consumer demand behavior in multicommodity markets using both cross-section and time series data.

The publication by Houthaker (1960) of a theoretical landmark about additive preferences marked the end of the infant stage of the systems approach (Barten, 1977). Since then, there has been an almost continuous flow of journal articles and published materials, theoretical and applied, delving mainly on systems of consumer demand equations. The primary concern of the modern strand of the literature on demand systems is the specification of the mathematical form of the complete system model. The trust along this area in microeconomics is in the formulation of the model or models with the most desirable properties (Barten, 1977). Over the years, many models have been proposed, but perhaps the most outstanding among these complete demand models are the Rotterdam model, due to Theil (1965) and Barten (1966), and the Almost Ideal Demand System (AIDS) by Deaton and Muellbauer (1980). These two models are considered excellent alternatives to the LES, which remained to be the model of choice by many researchers since the time of Stone (1954).

What made these three models extremely popular to consumer demand analysts and other economists is their demonstrated empirical validity as well as the fact that these models are the leading representative functional forms of the three approaches used in generating systems of consumer demand equations. No other models registered a better loyal following among demand researchers than these three theoretically sound and mathematically rigorous models. These demand systems can also be used to model budget shares of the consumption items on household's income (or spending). When taken in this form, the model becomes a system of Engel curves.

The type of Engel curve initially used in empirical studies was the singleequation model of budget shares and per capita disposable income for each
commodity item in the consumption basket. Empirical estimation can be performed in many ways. The review works of Prais and Houthakker (1971) and Brown and Deaton (1972) offered a glimpse of the various techniques used in estimating single-equation Engel curves. The common consensus in the reviews was that the double logarithmic and semi-logarithmic forms produced better goodness-of-fit performance than the other commonly used forms.

A major concern in the estimation of Engel curves is for the algebraic form of the model used should be consistent with observed consumer behavior and at the same time fall within the theoretical requirements of consumer demand theory. One important theoretical condition called the "adding-up" restriction is usually violated by single-equation models. Adding up requires that consumers do not spend more than what they earn. One functional form that satisfies this restriction and can represent closely demand behavior of consumers was originally proposed by Working (1943) and elaborated by Leser (1963), which came to become the most popular single-equation modeling technique for Engel curves under the name Working-Leser model. It allows for luxuries, necessities and inferior goods, and elasticities to vary with income. Finally, the form is linear in the logarithm of expenditure (under the nonsatiety assumption) and is easily estimated by OLS equation by equation.

More recent studies gravitate towards the use of full system models of Engel curves. The main reason for such a shift was the implausibility of some of the requirements of consumer demand theory when more explanatory variables are used in the single-equation forms. Under this scenario, the theoretical developments in the literature of the full system consumer demand equations converged with that of the full system Engel curve modeling as both are deemed to be theoretically similar in many respects. Current issues that are being resolved in the literature concern the appropriateness of using nonlinear budget shares and elasticities (e.g., Bhalotra \& Attfield, 1998; Gong et al., 2005; Kedir \& Girma, 2007) and the concern about the maximum dimension of the function space contained by the Engel curve (e.g., Yu, Hertel, Preckel, \& Eales, 2004; Cranfield et al., 2003).

## Philippines Demand and Engel Curves System Studies

In the Philippines, most of the complete system studies were about consumer demand analysis using cross-section data. Bouis (1990) estimated food demand elasticities for the Philippines' urban and rural populations on seven food categories and one nonfood category using a food characteristic demand model. He noted more pronounced tendencies for rural populations
to have higher estimated income elasticities for more expensive foods. In using the model to simulate consumption, he noted that the model correctly anticipated urban and rural consumption of certain food items using observed price and income data in out-of-sample simulation.

Balisacan (1994) employed a two-stage budgeting framework in estimating the coefficients of an AIDS implementation of another food demand system. Instead of using the original Deaton and Muellbauer (1980) specification of AIDS, he followed the suggestion of Blundell (1988) of incorporating quadratic real income term and some household demographic variables. Using data from the 1985 to 1992 FIES, he estimated the model for six consumption categories and uncovered different patterns of consumption of various demographic groups across survey periods.

The structure used by Balisacan (1994) gave Llanto (1996) a theoretical and procedural basis for a separate study aimed at determining the consumption response of agricultural households to changes in income and prices. Llanto posited that poor households are more vulnerable to adverse price movements, particularly that of food, due to inappropriate government policies mostly intended to protect producers but are detrimental to consumers (e.g., tariffs and price supports). Following the same procedure used by Balisacan, Llanto reported theoretically plausible and statistically adequate results. In this study, Llanto cited the study of Orbeta (1994), whose finding is consistent with his.

Orbeta and Alba (1998) employed the regional data files of the 1991 FIES to analyze the impact of macroeconomic policy changes on the nutritional status of Filipino households. To do this, they used an eight-equation food demand system with a modified AIDS specification for the purpose of estimating uncompensated price elasticities and expenditure elasticities. These elasticity estimates were then used as inputs to a multimarket model developed by Quisumbing (1988) that calculates the changes in nutrient consumption resulting from changes in prices and income. This allowed simulation exercises to be done through the APEX General Equilibrium Model (Cororaton, 1996) to examine the impact of the Tariff Reform Program implementation between 1988 and 1992 on micronutrient availability to the household sector.

The most interesting innovation of Orbeta and Alba (1998) is in the computation of price elasticities using cross-section data. In circumventing the price invariance of survey data, they exploited the fact that price variation occurs across provincial boundaries (spatial price variation). By grouping the nationwide sample into income quintiles and applying the contemporaneous provincial price indices of the various consumption categories on the households in each income grouping, they were able to generate expenditure
and price elasticities. The study was able to show progressive impact of policy changes on nutrition as compared to the impact on income.

An analytical study (Alba, 1999) on the consumption pattern of urban poor households was conducted using full system Engel curve models using a modified Working-Lesser model. The model was implemented using primary data collected by two NGOs-HASIK and PHLSSA-in five consumption categories (food, transport, clothing, utilities, and others). Estimation was carried out by the full information maximum likelihood (FIML) method, with cross-equation adding-up restrictions imposed to make the estimates satisfy consumer demand theory. The estimated model however produced very few significant parameter estimates, particularly in the transport and utility equations with no significant coefficients. Differential effects can not be sorted out even in Engel curve equations with significant coefficients. To figure out the net influences of the significant variables, Alba resorted to the use of counter-factual simulations implemented on households with hypothetical characteristics. The most robust among the findings uncovered was that urban poor families are (probably) less able to adjust to increases in prices of food and utilities than to similar changes in transport and clothing.

## Presentation and Analysis of Results

After implementing the different descriptive and analytical procedures outlined in the methodology section, we are now ready to present the results. The presentation is divided into two main sections: the first is the outcome of the descriptive analysis of the stylized facts about Metro Manila urban poor; the second is a discussion of the results of the analytical models employed in the study particularly the Working-Leser Engel curves of the various consumption items. A total of 38 statistical tables were constructed summarizing the information extracted from the Metro Manila sample of FIES 2009.

## Stylized Facts on the Demographics and Consumption Pattern of Metro Manila Urban Poor

Using the estimation procedure suggested by the survey design of FIES 2009, it is estimated that the total number of urban poor households in Metro Manila in 2009 stands at 492,392 families. Presented in Table 1 and Table 1A are the different demographic and locational characteristics of this segment of Metro Manila households. The average age of household heads is 45.63 years with a mean family size of 3.6 persons. The highest number of agespecific household members is under the working-age segment-the 25 - to

59-year-old bracket-with 1.5 persons on the average, while nonrelative members and infants (aged less than 1 year old) have the least number with less than 0.1 average members. Adolescents ( 7 to 14 years old) average 0.8 members; toddlers ( 1 to 6 years old) average 0.6 members, while young adults ( 15 to 24 years old) are estimated at a little less than 0.5 average.

Three out of four ( $75.1 \%$ ) households are headed by males, 7 out of 10 (70.1\%) have married heads, and about 6 in 10 (56.6\%) have high-schooleducated heads. Nine out of ten (89.3\%) households belong to the nuclear single-family type. The unemployment rate of the household heads stands at $21.95 \%$, of which married unemployed are $12.4 \%$ of household heads, male unemployed are $12.1 \%$, and heads who are older than 45 years and jobless are estimated at $17.4 \%$. Unemployment rate in the poorest decile is estimated at $13.6 \%$.

In those households with unemployed heads, 59,577 (12.1\% of all households) are male, 61,145 (12.4\%) are married, 85,950 (13.6\%) are at least 45 years old, and 6,592 (1.3\%) are college graduates.

Among Metro Manila's four contiguous districts, the largest number of poor households at 180,499 is located in District 2 (Eastern Metro Manila composed of Mandaluyong, Marikina, Pasig, Quezon City, and San Juan). District 3 (CAMANAVA District-Caloocan, Malabon, Navotas, and Valenzuela) houses 132,949 households, while District 4 (Southern Metro Manila-Las Piñas, Makati, Muntinlupa, Parañaque, Pasay, Pateros, and Taguig) has 124,952 poor households. The district comprising the City of Manila has the least number of poor households at 53,991. Judging the severity of poverty across districts may not be appropriate because of scale effects; the number of poor households in districts with bigger geographical area is expectedly higher than smaller districts. Looking at the per capita income of poor households in the four districts, the CAMANAVA District, with per capita income of $\mathrm{P} 43,170$, proved to have the poorest of the poor while the City of Manila with per capita income of $\mathrm{P} 45,584$ has poor with the highest purchasing power. Estimates of the average income, expenditures, per capita income, and per capita expenditure of the poor in the different districts are presented in Table 1B.

Sampling design-consistent estimation of the average income and expenditure of the poor in Metro Manila resulted in the figures of P117,087 and P115,433, respectively, in current (2009) peso, with per capita figures of P44,008 and P42,521. These numbers are less than half of Metro Manila's FIES results (P356,000 income and P309,000 expenditure) reported by NSO for the year 2009 but better than those estimated for ARMM (P113,000 income and P98,000 expenditure) during the same year (NSO Press 1 Release Number: 2011-07). Despite their meager purchasing power, the urban poor
of the capital region managed to generate an estimated P1,654 average savings (compared to Metro Manila savings of P47,000). As expected, food accounts for the lion share of both income and expenditure of the households, with budget shares of $49.94 \%$ of income and $50.41 \%$ of expenditure. House rent ( $17.46 \%$ of income and $17.74 \%$ of expenditure) and utilities ( $9.37 \%$ of income and $9.48 \%$ of expenditure) are the two other major consumption items. These three categories, together with household operations and personal care and effects, registered $100 \%$ consumption incidence (or items consumed by all sample households) during the reference period.

As gleaned from Tables 2, 6, and 7, expenditure items receiving the least budget shares are purchases of nondurable furnishings ( $0.10 \%$ of income and $0.11 \%$ of expenditure), house repair and maintenance ( $0.16 \%$ of income and $0.17 \%$ of expenditure), recreation $(0.22 \%$ of income and $0.22 \%$ of expenditure), and education ( $0.7 \%$ of income and $0.69 \%$ of expenditure). These items also registered the least consumption incidence although not in the same order. Interestingly, $28.36 \%$ of the big cities' poor paid taxes, $59.37 \%$ were able to save part of their income, $68.46 \%$ turned in positive expenditure on gifts and contributions to others, and more than half (51.59\%) consumed alcoholic beverages.

## Nonpoor Versus Poor Income Disposition

Looking at the other segment of the population of households in Metro Manila we labeled "Nonpoor," which basically consist of households belonging to the top 8 regional income deciles, a glaring contrast in consumption patterns may be noted. Table 7A presents the disposition of household income and consumption incidence by the nonpoor households of all consumption items. Also exhibited in the table are the average income and expenditure per household as well as the per capita income and expenditure figures. To highlight the contrast in consumption patterns and purchasing power between nonpoor and poor households, Table 7B is constructed from information in Table 7 and Table 7A.

The validity of the Engel's Law that richer families tend to have lower proportion of their income devoted to food is apparent in Table 7B as only $36.38 \%$ of the nonpoor's income is consigned to food while the figure is $49.94 \%$ for the poor. In all other expenditure items, the disposition of their income essentially differ, but the ranking in their importance is basically the same, especially in the top two items-food and housing-which account for the bulk of their income. For the nonpoor, savings occupy the third highest allocation proportion, while utilities are the third highest for the poor. The difference in their savings rate is an awe-inspiring ratio of more than $10: 1(9.89 \%$ for the nonpoor versus $0.91 \%$ for the poor). Two other items
exhibit glaring contrasts: tax payments ( $2.33 \%$ versus $0.36 \%$ ) and education expenditures ( $3.18 \%$ versus $0.70 \%$ ). These figures suggest an extreme disparity in well being enjoyed by the nonpoor over the poor.

With regards to consumption incidence (percentage of the total households consuming positive amount) of the various items, the two segments registered $100 \%$ incidence of almost the same items except for savings, where only $59.37 \% \%$ of the poor was able to save while the nonpoor posted $100 \%$. Among the other noteworthy differences in consumption incidence are in education, recreation, durable, and nondurable furnishings, special occasions of the family, gifts and contribution to others, house repairs and maintenance, and tax payments. When one looks at the hard figures of average household and average per capita income and expenditure, the picture of contrast will be complete-for the nonpoor vis-à-vis the poor, total income (almost fourfold), total expenditure (threefold), per capita income ( 2.4 -fold), and per capita expenditure (double).

## Design-Consistent vis-à-vis Simple Random Sampling (SRS) Estimates

One of the value-added features of the study is the survey design-consistent estimation procedure employed in all of the descriptive and analytical methodologies implemented. The 2009 FIES is a complex survey with clustering and stratification features of the different stages of sample selection; hence, treating the raw data as elements of a simple random sample when used in data analysis will produce biased and inconsistent results (Deaton, 1997). To make a comparative analysis of the difference between the designconsistent and SRS estimates, Tables 2, 3, and 4 will be of help.

Presented in Tables 2 and 3 are the design-consistent and SRS estimates of the mean household consumption by expenditure categories, respectively. Table 4 exhibits the two estimates side by side to highlight their difference. It is to be emphasized that the SRS estimates disregard the true survey design of FIES and hence are fictitious and are generated only for comparative analysis. One may note the glaring difference between the two sets of estimates, with the design consistent estimates being generally higher than SRS estimates and having larger standard errors. Out of 23 items estimated, only six SRS estimates are higher than the design consistent estimates and only seven produced higher standard errors.

In all of the tables showing design consistent estimates, an indicator of the relative efficiency of SRS estimates over that of design-based figures, called the Deff, is included for reference. A Deff figure of 1.5000 can be interpreted to mean that SRS without replacement is $50 \%$ more efficient (lesser variance) than a complex design should SRS be the actual sample selection procedure
used. However, as mentioned in the Methodology section, SRS estimates are biased and inconsistent (hence misleading) if the true survey design involves clustering and stratification.

## Estimated Income and Expenditure Elasticities

Further insights can be gathered beyond a descriptive analysis of the budget allocation process of Metro Manila poor households when we can quantify the manner they consume the various consumption items in response to their changing disposable income. We call this measure income elasticity of demand. Sometimes we use the alternative measure called expenditure elasticity when we equate disposable income to the total expenditure. Such an assumption is usually made in analytical studies and is necessary to allow the adding-up restriction of consumer demand theory to be relevant. In this study, both the income and expenditure elasticities are computed as we allow savings to be endogenized and treated as an additional consumption category in the computation of income elasticities.

One of the most useful applications of the estimated elasticities is in the classification of the consumption items as necessity or luxury goods. Identifying which of the different expenditure categories are considered necessity for the urban poor may provide important insights into the type of assistance suitable for this segment of the population. The following summary, taken from Tables 7 and 8, gives the results of the computation of both the income and the expenditure elasticities for the different budget items.

| Consumption Item | Income <br> Elasticity | Classification | Expenditure <br> Elasticity | Classification |
| :--- | :---: | :---: | :---: | :---: |
| Food | 0.8734 | Necessity | 0.9558 | Necessity |
| Alcoholic beverages | $\mathrm{ns}(\mathrm{p}>0.567)$ | Independent | $\mathrm{ns}(\mathrm{p}>0.942)$ | Independent |
| Tobacco | 0.5292 | Necessity | $\mathrm{ns}(\mathrm{p}>0.143)$ | Independent |
| Fuel, light, and water | 0.8066 | Necessity | 0.8812 | Necessity |
| Transportation and <br> communication | 1.5703 | Luxury | 1.6581 | Luxury |
| Household operations | $\mathrm{ns}(\mathrm{p}>0.125)$ | Independent | $\mathrm{ns}(\mathrm{p}>0.396)$ | Independent |
| Personal care and effects | $\mathrm{ns}(\mathrm{p}>0.666)$ | Independent | 1.1105 | Luxury |
| Clothing and footwear | $\mathrm{ns}(\mathrm{p}>0.262)$ | Independent | 1.1683 | Luxury |
| Education | 2.1169 | Luxury | 2.1429 | Luxury |

continued...

| Recreation | 1.7832 | Luxury | 1.8915 | Luxury |
| :--- | :---: | :---: | :---: | :---: |
| Medical care | $\mathrm{ns}(\mathrm{p}>0.828)$ | Independent | $\mathrm{ns}(\mathrm{p}>0.665)$ | Independent |
| Nondurable furnishings | $\mathrm{ns}(\mathrm{p}>0.164)$ | Independent | 1.4787 | Luxury |
| Durable furnishings | 3.0067 | Luxury | 2.8230 | Luxury |
| Taxes paid | 3.0396 | Luxury | 3.0175 | Luxury |
| House rent/rental value | 0.5355 | Necessity | 0.6407 | Necessity |
| House maintenance/ <br> repairs | $\mathrm{ns} \mathrm{(p>0.766)}$ | Independent | $\mathrm{ns}(\mathrm{p}>0.648)$ | Independent |
| Special occasions | 1.3740 | Luxury | 1.3993 | Luxury |
| Gifts and contributions | 1.5900 | Luxury | 1.7579 | Luxury |
| Other expenditures | 2.3792 | Luxury | 2.3876 | Luxury |
| Savings | 9.3401 | Luxury |  |  |

Note. ns—not significant (with $p$-value $>0.05$ ).

As seen in the above summary, five (5) items are categorized as necessity while the rest are either luxury or independent (with insignificant income/ expenditure coefficients in the basic Working-Leser Engel curves) goods. Both income and expenditure elasticities agree with their classification (except for three items-tobacco, personal care and effects, and clothing, footwear and other wears). Foremost among the list of necessary consumption items are food, utilities (fuel, light, and water), and house rent, which a priori are items the poor cannot do without. The other four necessities (alcoholic beverages, tobacco, medical care, and household operations) are not really expected a priori. However, when one analyzes the nature of these items, one can justify their classification as necessary goods for the poor.

For the expenditure items classified as luxury by either income or expenditure elasticities, sound economic sense can be gleaned from their inclusion. Transportation and communication; personal care and effects; clothing, footwear, and other wear; education; recreation; durable and nondurable furnishings; special occasions of the family; gifts and contributions; house maintenance and repairs; tax payments; and household savings may be expected to fall at the lower priority end of the budget formation of the financially challenged segment of the population. The items having the highest income elasticities-savings (9.34), tax payment (3.04), durable furnishings (3.01), and education (2.12) -indicate the aspirations of the poor to consume more of these items when their purchasing power improves.

## Results of Engel Curve Modeling

The income and expenditure elasticities presented in the previous section are estimated using the basic (linear-logarithmic) Working-Leser Engel curves (1) estimated for each item using the elasticity formula (5). When the objective is to model how the budget allocation process of Metro Manila poor is influenced by the household's socioeconomic and demographic characteristics, the basic model has to be augmented to form model (3) called the augmented Working-Leser Engel curves (Working, 1943, and Leser, 1963).

The model given by specification (5) represents a system of Engel curves of the various consumption items which are seen to be linked through their stochastic disturbance terms, thus forming a system of seemingly unrelated regression equations (SURE) to be estimated simultaneously via the joint generalized least squares (JGLS) estimation, which is asymptotic FIML. Twenty (20) statistical tables are constructed (Tables 10 to 30) to exhibit the results of SURE estimation of both the income and the expenditure Engel curves. Tables 31 and 32 show the correlation matrix of the residuals of the expenditure and income Engel curves, respectively, together with the results of the Breusch-Pagan tests of independence of the residuals to empirically validate the assumption underlying the SURE estimation of the Engel curves that there exist cross-equations linkage via their error terms. The test for both expenditure and income Engel curves turned in highly significant results ( $p<0.0001$ ), hence validating the propriety of using the seemingly unrelated regression framework, instead of doing equation-by-equation estimation via OLS. Tables 33A and 33B present the goodness-of-fit measures for the two Engel curve SURE systems. From these tables, all equations with the exception of repairs and maintenance and durable furnishings have excellent goodness of fit.

The most important item in the consumption basket of the urban poor in Metro Manila is food, which accounts for a little over $50 \%$ of the family's income or expenditure. From Table 10, household consumption of food as revealed by its augmented Engel curves is strongly influenced by logarithm of income or total expenditure and the different household composition variables. Additional memberships in all age-specific categories are highly significantly positive except for the eldest category of 60 years old and over. The working age class of 25 to 59 years old appears to have the highest relative increase in food consumption as their membership grows by an additional person ( $3.72 \%$ per person), followed by the two younger groups with almost identical incremental relative consumption of $3.5 \%$ increase per additional member. Food consumption by households with high-school-
educated heads and those 45 years and ever registered significantly negative food consumption change per household. Households situated in Districts 2 and 4 and those under the single-family-type group turned in significantly higher percentage increase.

Alcohol and beverage consumption relative change per household is significantly higher for male-headed households, ceteris paribus, while those in the poorest decile and with elder heads have significantly lower relative consumption. Heavy users of alcohol and beverages per capita are inferred to be those belonging to the working-age population while those in other age groups except the toddlers and eldest members (with insignificant coefficients) have significantly negative semielasticities. Locational and other demographic variables, as seen in Table 11, have insignificant percentage change in alcohol and beverage consumption. As reflected in Table 12, the Engel curve for cigarette and tobacco also suggests that male-headed households are heavy users of this consumption item, while those whose heads are married and those belonging to the elder category of heads have negative coefficients. On a per-person basis, working-age members have positive incremental change in percentage consumption of cigarettes and tobacco. The three district dummies, on the other hand, have significantly lower percentage change in cigarette and beverage consumption over the base Metro Manila district of the City of Manila.

The Engel curves for utilities show that all age-specific household membership of poor households have significantly positive semielasticities for electricity, gas, and water, particularly the eldest age group and the adolescents. Households with married heads also registered positive and significant semielasticity as well as all of the Metro Manila district dummies, signifying the increased utilities consumption of the poor with these attributes. With regards to transportation and communication, a pronounced disparity of the results of income and expenditure Engel curves was noted. In particular, consumption does not depend on income for the income curve while expenditure curve depends heavily on income. Both curves however have significant coefficients for the above-60-years-age group (negative), the above-45-years-old group (negative), college graduate heads (positive), and Metro Manila District 4 (positive). These bits of information from Table 14 indicate the diminished need of elder poor and increased need of highly educated poor for transport and communications.

Consumption on household operations does not depend on either income or total expenditure by the household as reflected in Table 15. Households with highly educated heads and those situated in the CAMANAVA District as well as those in the poorest income decile have significantly positive coefficients; other variables have insignificant coefficients. For personal
care and effects (Table 16), all age-specific household membership variables turned in significant positive semielasticities with the sole exception of the senior citizens, who have significantly negative figures for both curves. Married households and those in the CAMANAVA District and fourth district of Metro Manila also have positively significant coefficients. Negatively significant coefficients are noted for male-headed households

Recreation's budget share of income and total expenditure varies significantly negative with regards to young adults and working-age adults as well as the household being of the single nuclear type. Total income, total expenditure, and other variables do not significantly affect the poor's budget formation for recreation (Table 17).

For medical care as a consumption item (Table 18), both income and expenditure Engel curves indicate the important factors that show the consumption pattern of the poor. Consumption varies negatively with income or expenditure; infants and the oldest age group receive the most positive semielasticities; working adults ( 25 to 59 years old) have negative semielasticities-suggesting the poor's priority in allocating their income to medical needs of the household members-infants and eldest first at the expense of the working adults. Other explanatory variables have insignificant roles in the budget formation for medical care.

Augmented Working-Leser Engel curves for nondurable and durable furnishings (Tables 19 and 20) produced insignificant semielasticities in all explanatory variables, even the logarithm of total income and total expenditures as well as their locational circumstances. This empirical result suggests that budget allocation for any types of furnishing is not systematically related to any of their household attributes; they can make do with whatever furnishings they have or come to acquire over time.

Even the poor segment of Metro Manila population considers education important as indicated by both the income and expenditures Engel curves for this consumption item. Table 21 reveals that the proportion of income/ expenditure allocated to education by the poor significantly vary (positively) with the number of household members who are of school age. Interestingly, even the number of young working-age adults has significant influence on the budget formation for education, which may be interpreted to mean that urban poor working population tend to acquire education even later than normal.

In a society where the regime of socialized taxation is the norm, as in the Philippines, the poor are supposed to enjoy the benefit of being subsidized by the upper income segments of the population, especially when it comes to paying income taxes. This norm however does not exempt them from paying other types of taxes that are imposed by consuming something or by
enjoying certain services. Hence, tax payment is also a distinct budget item even for the poor. Although only $28.26 \%$ of our sample households paid tax in 2009, the determinants of budget share for taxes can still be assessed using Engel curves. Table 22 presents the income and expenditure Engel curves for tax payments. Some of the most significant predictors are the single status of household head and the completion of a college degree, both of which have significantly positive coefficients. The negative predictors of tax payments among the poor are the presence of children in the household (toddlers and adolescents), the household head being older than 45 years old, and the household being at the bottom $10 \%$ of Metro Manila families in terms of income. With respect to locational attributes of the poor, those situated in Metro Manila District 4 (Southern MM District) have significantly positive semielasticity.

Among the estimated Engel curves in this study, minor repairs and maintenance income and expenditure Engel curves exhibit a poor fit as evidenced by the lack of significant determinants of this budget item. Table 23 shows the estimated model generated by the iterative seemingly unrelated regression estimation (SURE) procedure. Like that of the nondurable and durable furnishings curves, budget formation for repairs and maintenance does not depend on any specific demographic and other socioeconomic attributes of the urban poor households of Metro Manila.

Clothing, footwear, and other wear budget share depends on some age-specifichouseholdmemberships(seeTable24).Thepresenceofadolescents-7 to 14 years old-has shown to positively influence budget formation for this consumption item, while working-age adults (25- to 59 -year-olds) and seniors ( 60 years old and over) negatively affect it. Surprisingly, household members who are nonrelatives (e.g., friends, household helps) exhibit strong explanatory influence on the share of clothing and footwear in the family's budget. This phenomenon may be due to the payment in kind arrangement poor families adopt in asking nonrelatives to stay and help in household chores.

The second most important item in the budget of Metro Manila poor households is house rental. It accounts for a little less than $20 \%$ of the household's income or total expenses. It is also among the items in the consumption basket of the poor with $100 \%$ consumption incidence. Consequently, it is expected that budget allocation for this item may have numerous predictors. As seen in Table 25, both the income and the expenditure Engel curves for house rentals are significantly influenced by most household composition variables, except the infants, seniors, and nonrelatives. Interestingly, every relative increase in household composition (toddlers, adolescents, young adults, and working adults) decreases the
proportion of house rentals out of the income or expenditure of the household. This may seem to be counter-intuitive at first, but for poor families, balancing the budget when household members increase involves a trade-off among the major consumption items-food and house rentals. But since the share of food cannot be compromised, house rental's share decreases.

Urban poor from Metro Manila form their budget allocation for special occasions of the family on the basis of its income with positive coefficient. A relative increase in their income results in an increase on the budget allocation proportion to expenses on special occasions. The other positive predictor for this consumption item is the high school education of the household heads. Factors that contribute negatively are the jobless status of the household head, the household being of the single-family type, and the presence of adolescents.

With respect to gifts and contributions made by the household, a good number of predictors are noted in the Engel curves for this category of consumption by the poor (Table 27). Other than categorizing this item as a luxury, budget allocation for this item positively responds to income of the family but negatively related to all household composition variables, with the working-age group having the highest negative semielasticity. Other negative predictors are the age of the household head and the type of household, while the only positive factor other than income is the married status of the household head. The rest of the explanatory variables are insignificant. The insight that can be inferred from these results is that due to the limited financial capability of poor families, the needs of the family members come first before giving away part of their meager income as gifts and contributions. However, as their income grows, they tend to engage more in charitable giving.

Savings is a feature of only the income Engel curve as we deliberately consider it as an item in the budget list of the family. As can be seen in Table 28, the income Engel curve reveals a lot of insights into how the poor households in Metro Manila form their budget allocation for savings. Realistically, the budget share of savings correlates positively with the income of the family as evidenced by the highly significant semielasticity of 0.14097, which when interpreted means that for every percent increase in the income of the family, they tend to increase the amount they set aside for future use by an additional budget allocation of $14.1 \%$ ceteris paribus. Adolescents ( 7 to 14 years old) and young adults ( 15 to 24 years old) exert significantly negative influence in the family's saving behavior. This observed phenomenon may be due to education, medical care, and other needs of these age groups that impinge on the family's desire to save. The presence of nonrelative members
of the household and, understandably, the jobless status of the head also dampen the savings propensity of the poor.

Interestingly, households with lesser educated heads are more prone to savings than households with more educated heads. The same observation was noted for single-headed households vis-à-vis households with married heads. Poor households also present locational variation in savings budget allocation with District 2 (East Metro Manila) and District 4 (South Metro Manila) with significantly negative differential savings propensity than the benchmark district, the City of Manila. The CAMANAVA District has insignificant differential intercept, hence having the same propensity as the benchmark district.

## Consumption Profile of the Urban Poor in Metro Manila

The main objective of the study is to generate the consumption profile of the poor households in Metro Manila area using survey design-consistent analysis of the most recently available FIES data. The foregoing stylized facts and results of a systems-wide modeling of Engel curves of the various consumption items comprising the market basket of the poor provide us with the necessary information to meet this objective. Since all of the descriptive statistics and Engel curves presented pertain to the average household, an attempt will be made to create a portrait of a typical Metro Manila poor household in a nontechnical and intuitive manner.

Based on the results of the analytical procedures implemented, the typical urban poor family in Metro Manila is composed of four members headed by a 46 -year-old high-school-educated father, living in District 2 (Eastern Metro Manila) of Metro Manila with his wife and two children-an adolescent and a toddler. They live as a single-family household whose family income in 2009 amounted to P117,087 and have a total expenditure of P115,433, making them on the average better off than families living in the Autonomous Region of Muslim Mindanao but more than twice worse off than the average Metro Manila families. The typical poor family finds it difficult to allocate their income to their various consumption requirements as they need to spend two-thirds of it for food (49.9\%) and house rent ( $17.5 \%$ ), leaving the remaining third to other expenditure items, especially those needed by their children like education, medical care, and apparel. Despite their meager income, the family managed to make both ends meet and is able to pay tax and save a modest P1,654 for the year.

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## Appendix: Tables

Table 1. Design Consistent Means of Demographic Characteristics of Metro Manila Poor Households, 2009

| Household Demographics | Mean | Standard Error | 95\% Confidence Interval |  | Design Effect |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower <br> Limit | Upper <br> Limit |  |
| Age of household head | 45.62916 | 0.52725 | 44.59107 | 46.66726 | 1.0967 |
| Family size | 3.58901 | 0.06710 | 3.45691 | 3.72112 | 1.0929 |
| Members of household younger than 1 year | 0.06969 | 0.00989 | 0.05022 | 0.08915 | 1.2461 |
| Members of household who are 1 to 6 years old | 0.56111 | 0.02884 | 0.50433 | 0.61789 | 0.9663 |
| Members of household who are 7 to 14 years old | 0.76892 | 0.03627 | 0.69750 | 0.84033 | 1.0224 |
| Members of household who are 15 to 24 years old | 0.43399 | 0.02829 | 0.37829 | 0.48968 | 1.1257 |
| Members of household who are 25 to 59 years old | 1.50160 | 0.02936 | 1.44379 | 1.55940 | 1.2815 |
| Members of household who are 60 years and older | 0.27787 | 0.02125 | 0.23603 | 0.31972 | 1.2060 |
| Number of nonrelative members of household | 0.02697 | 0.00920 | 0.00885 | 0.04508 | 1.0934 |
| Male household head (dummy) | 0.75091 | 0.01606 | 0.71928 | 0.78253 | 1.1766 |
| Female household head (dummy) | 0.24909 | 0.01606 | 0.21747 | 0.28072 | 1.1766 |
| Household head is jobless (dummy) | 0.21952 | 0.01510 | 0.18978 | 0.24926 | 1.1358 |
| Household head is 45 years old and older (dummy) | 0.46172 | 0.01756 | 0.42714 | 0.49629 | 1.0585 |
| Single household head (dummy) | 0.09838 | 0.01184 | 0.07507 | 0.12168 | 1.3471 |
| Married household head (dummy) | 0.70070 | 0.01618 | 0.66885 | 0.73255 | 1.0644 |
| Widowed household head (dummy) | 0.13624 | 0.01223 | 0.11216 | 0.16032 | 1.0843 |
| Separated or divorced household head (dummy) | 0.06468 | 0.00813 | 0.04867 | 0.08069 | 0.9322 |
| At most elementary graduate (dummy) | 0.30770 | 0.01804 | 0.27217 | 0.34323 | 1.3038 |
| High school undergraduate or graduate (dummy) | 0.56456 | 0.01515 | 0.53473 | 0.59440 | 0.7966 |

Table 1 continued...

| With some college education <br> (dummy) | 0.09319 | 0.01054 | 0.07243 | 0.11395 | 1.1221 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| At least college graduate (dummy) | 0.03455 | 0.00635 | 0.02205 | 0.04704 | 1.0304 |
| Single type of household (dummy) | 0.89289 | 0.01115 | 0.87095 | 0.91484 | 1.1084 |
| Household in the poorest decile <br> (dummy) | 0.50025 | 0.01878 | 0.46327 | 0.53724 | 1.2040 |
| Household in the City of Manila <br> (dummy) | 0.10965 | 0.01410 | 0.08188 | 0.13742 | 1.7380 |
| Household in Metro Manila District <br> 2 (dummy) | 0.36658 | 0.03429 | 0.29905 | 0.43410 | 4.3205 |
| Household in Metro Manila District <br> 3 (dummy) | 0.27001 | 0.02599 | 0.21884 | 0.32117 | 2.9223 |
| Household in Metro Manila District <br> 4 (dummy) | 0.25377 | 0.02701 | 0.20058 | 0.30695 | 3.2864 |
| Household head is married and <br> jobless (interaction) | 0.12418 | 0.01153 | 0.10148 | 0.14688 | 1.0425 |
| Household head is a college <br> graduate and jobless (interaction) | 0.01339 | 0.00411 | 0.00529 | 0.02148 | 1.0916 |
| Household head is 45 years old and <br> older and jobless (interaction) | 0.17456 | 0.01277 | 0.14942 | 0.19969 | 0.9648 |
| Household head is male and jobless <br> (interaction) | 0.12100 | 0.01154 | 0.09828 | 0.14371 | 1.0676 |
| Household head is jobless and in <br> poorest decile (interaction) | 0.13622 | 0.01235 | 0.11191 | 0.16052 | 1.1051 |

Table 1A. Design-Consistent Estimates of Total Number of Metro Manila Poor Households by Demographic and Locational Characteristics

|  |  |  | $95 \%$ Confidence <br> Poor Households Demographic or <br> Locational Characteristics |  | Estimated <br> Number of <br> Households |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Linearized <br> Standard <br> Error | Design <br> Effect |  |  |  |
|  |  | Lower <br> Limit | Upper <br> Limit |  |  |
| Male headed | 369,740 | 26,399 | 317,763 | 421,717 | 13.1088 |
| Household head is jobless | 108,090 | 9,089 | 90,194 | 125,986 | 1.6964 |
| Household head is 45 years old <br> and older | 227,346 | 15,804 | 196,229 | 258,463 | 3.5358 |
| Household head is single | 48,440 | 6,724 | 35,200 | 61,679 | 1.7935 |

Table 1A continued...

| Household head is married | 345,021 | 25,477 | 294,859 | 395,183 | 10.8892 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Household head is widowed | 67,084 | 6,633 | 54,025 | 80,144 | 1.3153 |
| Household head is separated | 31,847 | 4,113 | 23,750 | 39,944 | 0.9836 |
| Household head has elementary <br> education | 151,508 | 15,649 | 120,698 | 182,319 | 4.0446 |
| Household head has high school <br> education | 277,987 | 18,014 | 242,521 | 313,454 | 4.6440 |
| Household head is college <br> undergraduate | 45,886 | 5,311 | 35,430 | 56,342 | 1.1741 |
| Household head is college <br> graduate | 17,010 | 3,079 | 10,948 | 23,073 | 1.0001 |
| Single-type household | 439,653 | 28,458 | 383,623 | 495,684 | 29.7929 |
| Household is in City of Manila | 53,991 | 6,787 | 40,629 | 67,353 | 1.6598 |
| Household is in Metro Manila <br> District 2 | 180,499 | 23,550 | 134,131 | 226,868 | 8.4036 |
| Household is in Metro Manila <br> District 3 | 132,949 | 13,934 | 105,514 | 160,384 | 3.4658 |
| Household is in Metro Manila <br> District 4 | 124,953 | 15,025 | 95,371 | 154,534 | 4.1939 |
| Household head is male and <br> jobless | 59,577 | 6,695 | 46,395 | 72,760 | 1.4829 |
| Household head is married and <br> jobless | 61,145 | 6,842 | 47,674 | 74,617 | 1.5144 |
| Household is in bottom regional <br> income decile and with jobless <br> head | 67,072 | 6,906 | 53,474 | 80,670 | 1.4262 |
| Household head is college <br> graduate but jobless | 6,592 | 2,027 | 2,601 | 10,582 | 1.0943 |
| Household head is at least 45 <br> years old and jobless | 85,950 | 7,814 | 70,565 | 101,334 | 1.4908 |

Table 1B. Design Consistent Estimates of the Mean Household Income and Expenditure, Per Capita Household Income and Expenditure, Metro Manila Poor by District, 2009

| Metro Manila District | Mean | Standard Error | 95\% Confidence Interval |  | Design Effect |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower <br> Limit | Upper Limit |  |
| Total income |  |  |  |  |  |
| City of Manila | 118,970 | 3,021 | 113,022 | 124,919 | 1.38664 |
| Eastern Metro Manila | 116,018 | 1,576 | 112,914 | 119,121 | 1.03770 |
| CAMANAVA | 113,131 | 2,213 | 108,774 | 117,488 | 1.29669 |
| Southern Metro Manila | 122,027 | 1,823 | 118,437 | 125,617 | 1.10880 |
| Metro Manila | 117,087 | 1,056 | 115,007 | 119,167 | 1.26440 |
| Total expenditure |  |  |  |  |  |
| City of Manila | 112,962 | 3,132 | 106,796 | 119,128 | 1.27085 |
| Eastern Metro Manila | 116,262 | 1,732 | 112,852 | 119,671 | 0.75605 |
| CAMANAVA | 108,867 | 2,285 | 104,367 | 113,366 | 1.16868 |
| Southern Metro Manila | 122,289 | 2,347 | 117,668 | 126,911 | 1.40513 |
| Metro Manila | 115,433 | 1,197 | 113,076 | 117,790 | 1.16270 |
| Per capita income |  |  |  |  |  |
| City of Manila | 45,584 | 3,997 | 37,714 | 53,453 | 1.32498 |
| Eastern Metro Manila | 43,644 | 1,631 | 40,432 | 46,856 | 1.03828 |
| CAMANAVA | 43,170 | 1,877 | 39,475 | 46,865 | 0.84477 |
| Southern Metro Manila | 44,745 | 2,549 | 39,727 | 49,763 | 1.63119 |
| Metro Manila | 44,008 | 1,106 | 41,830 | 46,187 | 1.16540 |
| Per capita expenditure |  |  |  |  |  |
| City of Manila | 42,991 | 3,994 | 35,127 | 50,854 | 1.49731 |
| Eastern Metro Manila | 42,521 | 1,497 | 39,574 | 45,468 | 1.06060 |
| CAMANAVA | 40,930 | 1,847 | 37,295 | 44,566 | 0.94781 |
| Southern Metro Manila | 44,010 | 2,372 | 39,341 | 48,679 | 1.69783 |
| Metro Manila | 42,521 | 1,049 | 40,455 | 44,587 | 1.23810 |

Table 2. Design Consistent Mean Household Consumption per Consumption Items, Metro Manila Poor Households, 2009

| Consumption Items | Estimate (Mean) | Standard Error | 95\% Confidence Interval |  | Design Effect |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower Limit | Upper <br> Limit |  |
| Food | 57,936.69 | 834.21 | 56,294.22 | 59,579.16 | 1.5405 |
| Alcoholic beverages | 1,050.02 | 72.01 | 908.24 | 1,191.81 | 1.0761 |
| Tobacco | 1,076.27 | 72.62 | 933.29 | 1,219.25 | 1.4984 |
| Fuel, light, and water | 10,813.77 | 186.39 | 10,446.79 | 11,180.76 | 1.2532 |
| Transport and communication | 6,037.71 | 235.03 | 5,574.97 | 6,500.45 | 1.5905 |
| Household operations | 1,751.18 | 61.40 | 1,630.28 | 1,872.08 | 1.1243 |
| Personal care and effects | 5,154.23 | 118.92 | 4,920.09 | 5,388.36 | 1.6050 |
| Clothing, footwear, and other wear | 2,359.85 | 89.46 | 2,183.71 | 2,536.00 | 2.0079 |
| Education | 876.90 | 104.06 | 672.02 | 1,081.78 | 0.9366 |
| Recreation | 270.11 | 46.59 | 178.38 | 361.84 | 1.1330 |
| Medical care | 1,799.57 | 177.24 | 1,450.60 | 2,148.54 | 1.2798 |
| Nondurable furnishings | 124.28 | 13.45 | 97.81 | 150.75 | 1.8355 |
| Durable furnishings | 1,531.20 | 515.88 | 515.49 | 2,546.90 | 2.5056 |
| Taxes paid | 490.61 | 103.00 | 287.80 | 693.41 | 1.4011 |
| Rental value of dwelling unit | 19,828.47 | 495.60 | 18,852.68 | 20,804.26 | 1.5732 |
| House maintenance and minor repairs | 188.04 | 37.45 | 114.31 | 261.78 | 1.1008 |
| Special occasions of the family | 1,254.55 | 95.82 | 1,065.88 | 1,443.21 | 1.5998 |
| Gifts and contributions to others | 1,845.09 | 204.53 | 1,442.40 | 2,247.78 | 1.0759 |
| Other expenditures | 1,044.25 | 81.03 | 884.72 | 1,203.78 | 1.2777 |
| Total income | 117,086.90 | 1,056.36 | 115,007.10 | 119,166.80 | 1.2644 |
| Total expenditure | 115,432.80 | 1,197.19 | 113,075.60 | 117,789.90 | 1.1627 |
| Total savings | 1,654.14 | 729.57 | 217.70 | 3,090.58 | 1.1147 |
| Per capita income | 44,008.03 | 1,106.456 | 41,829.54 | 46,186.52 | 1.1654 |
| Per capita expenditure | 42,520.93 | 1,049.151 | 40,455.27 | 44,586.59 | 1.2381 |

Table 3. SRS Estimates of the Mean Household Consumption by Consumption Items of Metro Manila Poor Households, 2009

| Consumption Items | SRS | Standard <br> Error | 95\% Confidence Interval |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Lstimates |  | Upper Limit |  |
| Food | $57,970.14$ | 674.83 | $56,645.62$ | $59,294.66$ |
| Alcoholic beverages | $1,034.89$ | 70.69 | 896.15 | $1,173.63$ |
| Tobacco | $1,065.17$ | 58.80 | 949.76 | $1,180.59$ |
| Fuel, light, and water | $10,787.73$ | 169.50 | $10,455.04$ | $11,120.41$ |
| Transport and communication | $5,940.51$ | 186.90 | $5,573.67$ | $6,307.34$ |
| Household operations | $1,741.31$ | 58.50 | $1,626.49$ | $1,856.14$ |
| Personal care and effects | $5,161.93$ | 63.34 | $4,978.47$ | $5,345.40$ |
| Clothing, footwear, and other <br> wear | $2,374.77$ | 111.35 | $2,250.37$ | $2,499.17$ |
| Education | 861.56 | 39.46 | 643.02 | $1,080.11$ |
| Recreation | 254.41 | 156.00 | 176.96 | 331.85 |
| Medical care | $1,749.81$ | 10.03 | $1,443.63$ | $2,055.99$ |
| Nondurable furnishings | 123.95 | 237.69 | 104.26 | 143.64 |
| Durable furnishings | $1,152.78$ | 77.51 | 686.26 | $1,619.30$ |
| Taxes paid | 470.23 | 392.77 | 318.10 | 622.35 |
| Rental value of dwelling unit | $19,917.95$ | 34.23 | $19,147.03$ | $20,688.86$ |
| House maintenance and minor <br> repairs | 178.38 | 198.25 | 111.19 | 245.57 |
| Special occasions of the family | $1,232.39$ | 73.71 | $1,087.71$ | $1,377.07$ |
| Gifts and contributions to <br> others | $1,817.93$ | 72.62 | $1,428.81$ | $2,207.05$ |
| Other expenditures | $1,037.49$ | $1,083.96$ | 894.96 | $1,180.03$ |
| Total expenditure | $104,873.30$ | 72.62 | $112,745.80$ | $177,000.90$ |
| Total income | $116,572.70$ | 945.16 | $114,717.60$ | $118,427.90$ |
| Per capita income | $44,310.61$ | $1,041.55$ | $42,266.32$ | $46,354.91$ |
| Per capita expenditure | $42,831.19$ | 958.90 | $40,949.12$ | $44,713.26$ |
|  |  |  |  |  |

Table 4. Comparative Table of the SRS and Design Consistent Estimates of Mean Consumption of Metro Manila Poor Households by Consumption Items, 2009

| Consumption Items | Design Consistent Estimate | Standard Error | 95\% Confidence Interval |  | SRS <br> Estimate | Standard Error | 95\% Confidence Interval |  | \% <br> Difference of SRS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower Limit | Upper Limit |  |  | Lower Limit | Upper Limit |  |
| Food | 57,936.69 | 706.22 | 56,550.55 | 59,322.83 | 57,970.14 | 674.83 | 56,645.62 | 59,294.66 | 0.06 |
| Alcoholic beverages | 1,050.02 | 70.94 | 910.79 | 1,189.26 | 1,034.89 | 70.69 | 896.15 | 1,173.63 | -1.44 |
| Tobacco | 1,076.27 | 62.73 | 953.14 | 1,199.40 | 1,065.17 | 58.80 | 949.76 | 1,180.59 | -1.03 |
| Fuel, light, and water | 10,813.77 | 168.10 | 10,483.83 | 11,143.72 | 10,787.73 | 169.50 | 10,455.04 | 11,120.41 | -0.24 |
| Transport and communication | 6,037.71 | 191.66 | 5,661.53 | 6,413.88 | 5,940.51 | 186.90 | 5,573.67 | 6,307.34 | -1.61 |
| Household operations | 1,751.18 | 59.05 | 1,635.28 | 1,867.08 | 1,741.31 | 58.50 | 1,626.49 | 1,856.14 | -0.56 |
| Personal care and effects | 5,154.23 | 98.26 | 4,961.36 | 5,347.09 | 5,161.93 | 63.34 | 4,978.47 | 5,345.40 | 0.15 |
| Clothing, footwear, and other wear | 2,359.85 | 66.24 | 2,229.84 | 2,489.86 | 2,374.77 | 111.35 | 2,250.37 | 2,499.17 | 0.63 |
| Education | 876.90 | 107.84 | 665.25 | 1,088.56 | 861.56 | 39.46 | 643.02 | 1,080.11 | -1.75 |
| Recreation | 270.11 | 49.15 | 173.65 | 366.57 | 254.41 | 156.00 | 176.96 | 331.85 | -5.81 |
| Medical care | 1,799.57 | 163.62 | 1,478.44 | 2,120.71 | 1,749.81 | 10.03 | 1,443.63 | 2,055.99 | -2.77 |
| Nondurable furnishings | 124.28 | 10.11 | 104.43 | 144.13 | 123.95 | 237.69 | 104.26 | 143.64 | -0.27 |
| Durable furnishings | 1,531.20 | 536.98 | 477.24 | 2,585.15 | 1,152.78 | 77.51 | 686.26 | 1,619.30 | -24.71 |
| Taxes paid | 490.61 | 100.81 | 292.74 | 688.47 | 470.23 | 392.77 | 318.10 | 622.35 | -4.15 |
| Rental value of dwelling unit | 19,828.47 | 425.15 | 18,994.00 | 20,662.94 | 19,917.95 | 34.23 | 19,147.03 | 20,688.86 | 0.45 |
| House maintenance and minor repairs | 188.04 | 38.95 | 111.59 | 264.50 | 178.38 | 198.25 | 111.19 | 245.57 | -5.14 |
| Special occasions of the family | 1,254.55 | 82.23 | 1,093.14 | 1,415.95 | 1,232.39 | 73.71 | 1,087.71 | 1,377.07 | -1.77 |
| Gifts and contributions to others | 1,845.09 | 205.11 | 1,442.52 | 2,247.67 | 1,817.93 | 72.62 | 1,428.81 | 2,207.05 | -1.47 |
| Other expenditures | 1,044.25 | 73.03 | 900.91 | 1,187.58 | 1,037.49 | 1,083.96 | 894.96 | 1,180.03 | -0.65 |
| Total expenditure | 115,432.80 | 1,258.88 | 112,961.90 | 117,903.60 | 104,873.30 | 72.62 | 112,745.80 | 177,000.90 | -9.15 |
| Total income | 117,086.90 | 980.60 | 115,162.30 | 119,011.60 | 116,572.70 | 945.16 | 114,717.60 | 118,427.90 | -0.44 |
| Per capita income | 44,008.03 | 1,106.456 | 41,829.54 | 46,186.52 | 44,310.61 | 1,041.55 | 42,266.32 | 46,354.91 | -0.69 |
| Per capita expenditure | 42,520.93 | 1,049.1 | 40,455.27 | 44,586.59 | 42,831.19 | 958.90 | 40,949.12 | 44,713.26 | -0.73 |

Table 5. Design-Consistent Estimates of Total Number of Metro Manila Poor Households by Demographic and Locational Characteristics

| Poor Households' Demographic or Locational Characteristics | Estimated Number of Households | Linearized Standard Error | 95\% Confidence Interval |  | Design Effect |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower <br> Limit | Upper Limit |  |
| Male headed | 369,740 | 26,399 | 317,763 | 421,717 | 13.1088 |
| Household head is jobless | 108,090 | 9,089 | 90,194 | 125,986 | 1.6964 |
| Household head is 45 years old and older | 227,346 | 15,804 | 196,229 | 258,463 | 3.5358 |
| Household head is single | 48,440 | 6,724 | 35,200 | 61,679 | 1.7935 |
| Household head is married | 345,021 | 25,477 | 294,859 | 395,183 | 10.8892 |
| Household head is widowed | 67,084 | 6,633 | 54,025 | 80,144 | 1.3153 |
| Household head is separated | 31,847 | 4,113 | 23,750 | 39,944 | 0.9836 |
| Household head has elementary education | 151,508 | 15,649 | 120,698 | 182,319 | 4.0446 |
| Household head has high school education | 277,987 | 18,014 | 242,521 | 313,454 | 4.6440 |
| Household head is college undergraduate | 45,886 | 5,311 | 35,430 | 56,342 | 1.1741 |
| Household head is college graduate | 17,010 | 3,079 | 10,948 | 23,073 | 1.0001 |
| Single-type household | 439,653 | 28,458 | 383,623 | 495,684 | 29.7929 |
| Household is in City of Manila | 53,991 | 6,787 | 40,629 | 67,353 | 1.6598 |
| Household is in Metro Manila District 2 | 180,499 | 23,550 | 134,131 | 226,868 | 8.4036 |
| Household is in Metro Manila District 3 | 132,949 | 13,934 | 105,514 | 160,384 | 3.4658 |
| Household is in Metro Manila District 4 | 124,953 | 15,025 | 95,371 | 154,534 | 4.1939 |
| Household head is male and jobless | 59,577 | 6,695 | 46,395 | 72,760 | 1.4829 |
| Household head is married and jobless | 61,145 | 6,842 | 47,674 | 74,617 | 1.5144 |
| Household is in bottom regional income decile and with jobless head | 67,072 | 6,906 | 53,474 | 80,670 | 1.4262 |
| Household head is college graduate but jobless | 6,592 | 2,027 | 2,601 | 10,582 | 1.0943 |
| Household head is at least 45 years old and jobless | 85,950 | 7,814 | 70,565 | 101,334 | 1.4908 |

Table 6. Budget Shares of Total Expenditure of Metro Manila Poor Households by Consumption Items, 2009

| Consumption Items | Estimated Share of Expenditure | Standard Error | 95\% Confidence Interval |  | Design Effect | Consumption Incidence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower <br> Limit | Upper Limit |  |  |
| Food | 50.41\% | 0.48\% | 49.46\% | 51.35\% | 1.8098 | 100.00\% |
| Alcoholic beverages | 0.91\% | 0.06\% | 0.79\% | 1.04\% | 1.0159 | 51.59\% |
| Tobacco | 0.99\% | 0.07\% | 0.85\% | 1.13\% | 1.5990 | 49.09\% |
| Fuel, light, and water | 9.48\% | 0.14\% | 9.21\% | 9.75\% | 1.2339 | 100.00\% |
| Transport and communication | 4.97\% | 0.18\% | 4.62\% | 5.31\% | 1.6503 | 96.10\% |
| Household operations | 1.54\% | 0.05\% | 1.44\% | 1.64\% | 1.1038 | 100.00\% |
| Personal care and effects | 4.44\% | 0.09\% | 4.26\% | 4.62\% | 1.8540 | 100.00\% |
| Clothing, footwear, other wear | 2.02\% | 0.08\% | 1.87\% | 2.17\% | 2.2550 | 97.27\% |
| Education | 0.69\% | 0.08\% | 0.53\% | 0.85\% | 0.9985 | 57.91\% |
| Recreation | 0.22\% | 0.04\% | 0.15\% | 0.30\% | 1.1345 | 46.68\% |
| Medical care | 1.54\% | 0.13\% | 1.29\% | 1.79\% | 1.1468 | 97.96\% |
| Nondurable furnishings | 0.11\% | 0.01\% | 0.08\% | 0.13\% | 1.7734 | 31.85\% |
| Durable furnishings | 0.92\% | 0.21\% | 0.50\% | 1.33\% | 2.3240 | 22.77\% |
| Taxes paid | 0.37\% | 0.07\% | 0.23\% | 0.51\% | 1.3731 | 28.36\% |
| Rental value of dwelling unit | 17.74\% | 0.39\% | 16.98\% | 18.51\% | 1.4380 | 100.00\% |
| House maintenance and minor repairs | 0.17\% | 0.04\% | 0.10\% | 0.24\% | 1.1258 | 8.31\% |
| Special occasions of the family | 1.06\% | 0.08\% | 0.90\% | 1.22\% | 1.7661 | 65.10\% |
| Gifts and contributions to others | 1.61\% | 0.17\% | 1.27\% | 1.96\% | 1.0931 | 68.46\% |
| Other expenditures | 0.83\% | 0.06\% | 0.70\% | 0.95\% | 1.2617 | 31.33\% |
| Total expenditure | 115,433 | 1,197 | 113,076 | 117,790 | 1.1627 |  |
| Total income | 117,087 | 1,056 | 115,007 | 119,167 | 1.2644 |  |
| Per capita income | 44,008 | 1,106 | 41,830 | 46,187 | 1.1654 |  |
| Per capita expenditure | 42,521 | 1,049 | 40,455 | 44,587 | 1.2381 |  |

Table 7. Budget Shares of Total Income of Metro Manila Poor Households by Consumption Items, 2009

| Consumption Items | Estimated Share of Income | Standard Error | 95\% Confidence Interval |  | Design Effect | Consumption Incidence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower <br> Limit | Upper Limit |  |  |
| Food | 49.94\% | 0.60\% | 48.76\% | 51.12\% | 1.7107 | 100.00\% |
| Alcoholic beverages | 0.90\% | 0.06\% | 0.77\% | 1.02\% | 1.0517 | 51.59\% |
| Tobacco | 0.95\% | 0.07\% | 0.82\% | 1.09\% | 1.5654 | 49.09\% |
| Fuel, light, and water | 9.37\% | 0.14\% | 9.08\% | 9.65\% | 1.2121 | 100.00\% |
| Transport and communication | 4.96\% | 0.18\% | 4.60\% | 5.33\% | 1.6220 | 96.10\% |
| Household operations | 1.52\% | 0.05\% | 1.42\% | 1.62\% | 1.0416 | 100.00\% |
| Personal care and effects | 4.40\% | 0.09\% | 4.21\% | 4.58\% | 1.6743 | 100.00\% |
| Clothing, footwear, and other wear | 2.00\% | 0.08\% | 1.85\% | 2.15\% | 2.2033 | 97.27\% |
| Education | 0.70\% | 0.08\% | 0.54\% | 0.85\% | 0.9697 | 57.91\% |
| Recreation | 0.22\% | 0.03\% | 0.15\% | 0.29\% | 1.1201 | 46.68\% |
| Medical care | 1.55\% | 0.14\% | 1.27\% | 1.82\% | 1.1837 | 97.96\% |
| Nondurable furnishings | 0.10\% | 0.01\% | 0.08\% | 0.13\% | 1.8068 | 31.85\% |
| Durable furnishings | 1.13\% | 0.36\% | 0.43\% | 1.83\% | 2.5182 | 22.77\% |
| Taxes paid | 0.36\% | 0.07\% | 0.22\% | 0.51\% | 1.3888 | 28.36\% |
| Rental value of dwelling unit | 17.46\% | 0.39\% | 16.69\% | 18.23\% | 1.4184 | 100.00\% |
| House repairs and maintenance | 0.16\% | 0.03\% | 0.09\% | 0.23\% | 1.1388 | 8.31\% |
| Special occasions of the family | 1.05\% | 0.08\% | 0.88\% | 1.21\% | 1.5896 | 65.10\% |
| Gifts and contributions to others | 1.52\% | 0.17\% | 1.18\% | 1.86\% | 1.0656 | 68.46\% |
| Other expenditures | 0.81\% | 0.06\% | 0.69\% | 0.93\% | 1.2756 | 31.33\% |
| Savings | 0.91\% | 0.64\% | * $0.35 \%$ | 2.17\% | 1.1426 | 59.37\% |
| Average income | 117,087 | 1,056 | 115,007 | 119,167 | 117,087 |  |
| Average expenditure | 115,433 | 1,197 | 113,076 | 117,790 | 115,433 |  |
| Per capita income | 44,008 | 1,106 | 41,830 | 46,187 | 44,008 |  |
| Per capita expenditure | 42,521 | 1,049 | 40,455 | 44,587 | 42,521 |  |

Table 7A. Budget Shares of Total Income of Nonpoor of Metro Manila Households by Consumption Items, 2009

| Consumption Items | Estimated Share of Income | Standard Error | 95\% Confidence Interval |  | Design Effect | Consumption Incidence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lower Limit | Upper Limit |  |  |
| Food | 36.38\% | 0.40\% | 35.58\% | 37.17\% | 3.35353 | 100.00\% |
| Alcoholic beverages | 0.58\% | 0.02\% | 0.53\% | 0.62\% | 1.99837 | 59.60\% |
| Tobacco | 0.59\% | 0.03\% | 0.53\% | 0.64\% | 2.41444 | 52.82\% |
| Fuel, light, and water | 7.53\% | 0.08\% | 7.37\% | 7.69\% | 2.22034 | 100.00\% |
| Transport and communication | 7.47\% | 0.13\% | 7.23\% | 7.72\% | 1.92315 | 99.86\% |
| Household operations | 1.86\% | 0.06\% | 1.74\% | 1.99\% | 2.18020 | 100.00\% |
| Personal care and effects | 3.49\% | 0.05\% | 3.38\% | 3.59\% | 3.18696 | 100.00\% |
| Clothing, footwear, and other wear | 1.92\% | 0.04\% | 1.84\% | 2.01\% | 4.02608 | 99.23\% |
| Education | 3.18\% | 0.12\% | 2.95\% | 3.41\% | 1.64224 | 78.65\% |
| Recreation | 0.39\% | 0.02\% | 0.35\% | 0.43\% | 2.52066 | 69.59\% |
| Medical care | 1.64\% | 0.08\% | 1.49\% | 1.79\% | 1.24062 | 99.39\% |
| Nondurable furnishings | 0.13\% | 0.01\% | 0.12\% | 0.15\% | 2.38343 | 45.70\% |
| Durable furnishings | 1.75\% | 0.18\% | 1.40\% | 2.10\% | 1.40642 | 40.36\% |
| Taxes paid | 2.33\% | 0.12\% | 2.10\% | 2.57\% | 3.04146 | 65.25\% |
| Rental value of dwelling unit | 15.47\% | 0.30\% | 14.87\% | 16.06\% | 3.71157 | 100.00\% |
| House repairs and maintenance | 0.26\% | 0.03\% | 0.21\% | 0.32\% | 1.58358 | 14.14\% |
| Special occasions of the family | 1.58\% | 0.07\% | 1.45\% | 1.70\% | 2.23376 | 85.25\% |
| Gifts and contributions to others | 1.63\% | 0.08\% | 1.48\% | 1.78\% | 1.92449 | 70.57\% |
| Other expenditures | 1.94\% | 0.05\% | 1.84\% | 2.03\% | 1.63887 | 77.13\% |
| Savings | 9.89\% | 0.43\% | 9.04\% | 10.73\% | 1.87639 | 100.00\% |
| Average Income | 416,002 | 16,024 | 384,487 | 447,517 | 5.73872 |  |
| Average Expenditure | 357,387 | 10,761 | 336,223 | 378,551 | 5.18452 |  |
| Per Capita Income | 105,362 | 5,573 | 94,402 | 116,322 | 5.80070 |  |
| Per Capita Expenditure | 90,020 | 3,807 | 82,532 | 97,507 | 5.25078 |  |

Table 7B. Disposition of Total Income and Consumption Incidence of Poor vis-à-vis Non poor Metro Manila Households, 2009

| Consumption Items | Estimated Share of Income |  | Consumption Incidence |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Nonpoor | Poor | Nonpoor | Poor |
| Food | $36.38 \%$ | $49.94 \%$ | $100.00 \%$ | $100.00 \%$ |
| Alcoholic beverages | $0.58 \%$ | $0.90 \%$ | $59.60 \%$ | $51.59 \%$ |
| Tobacco | $0.59 \%$ | $0.95 \%$ | $52.82 \%$ | $49.09 \%$ |
| Fuel, light, and water | $7.53 \%$ | $9.37 \%$ | $100.00 \%$ | $100.00 \%$ |
| Transport and communication | $7.47 \%$ | $4.96 \%$ | $99.86 \%$ | $96.10 \%$ |
| Household operations | $1.86 \%$ | $1.52 \%$ | $100.00 \%$ | $100.00 \%$ |
| Personal care and effects | $3.49 \%$ | $4.40 \%$ | $100.00 \%$ | $100.00 \%$ |
| Clothing, footwear, and other | $1.92 \%$ | $2.00 \%$ | $99.23 \%$ | $97.27 \%$ |
| wear | $3.18 \%$ | $0.70 \%$ | $78.65 \%$ | $57.91 \%$ |
| Education | $0.39 \%$ | $0.22 \%$ | $69.59 \%$ | $46.68 \%$ |
| Recreation | $1.64 \%$ | $1.55 \%$ | $99.39 \%$ | $97.96 \%$ |
| Medical care | $0.13 \%$ | $0.10 \%$ | $45.70 \%$ | $31.85 \%$ |
| Nondurable furnishings | $1.75 \%$ | $1.13 \%$ | $40.36 \%$ | $22.77 \%$ |
| Durable furnishings | $2.33 \%$ | $0.36 \%$ | $65.25 \%$ | $28.36 \%$ |
| Taxes paid | $15.47 \%$ | $17.46 \%$ | $100.00 \%$ | $100.00 \%$ |
| Rental value of dwelling unit | $0.26 \%$ | $0.16 \%$ | $14.14 \%$ | $8.31 \%$ |
| House repairs and maintenance | $1.58 \%$ | $1.05 \%$ | $85.25 \%$ | $65.10 \%$ |
| Special occasions of the family | $1.63 \%$ | $1.52 \%$ | $70.57 \%$ | $68.46 \%$ |
| Gifts and contributions to others | $1.94 \%$ | $0.81 \%$ | $77.13 \%$ | $31.33 \%$ |
| Other expenditures | $9.89 \%$ | $0.91 \%$ | $100.00 \%$ | $59.37 \%$ |
| Savings | 416,002 | 115,433 |  |  |
| Average household income | 357,387 | 117,087 |  |  |
| Average household expenditure | 42,521 |  |  |  |
| Per capita income | 105,362 | 44,008 |  |  |
| Per capita expenditure |  |  |  |  |
|  |  |  |  |  |

Table 8. Basic Working-Leser Engel Curves and Estimated Expenditure Elasticities of Metro Manila Poor Households, 2009

| Consumption Items | Constant | Standard <br> Error | $t$ Value | $p$ Value | Log of <br> Expenditure | Standard <br> Error | $t$ Value | $p$ Value | Expenditure <br> Elasticity |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Food | 0.76319 | 0.14770 | 5.17 | 0.000 | -0.02227 | 0.01286 | -1.73 | 0.084 | 0.9558 |
| Alcoholic beverages | 0.01260 | 0.04757 | 0.26 | 0.791 | -0.00030 | 0.00408 | -0.07 | 0.942 | 0.9671 |
| Tobacco | 0.05202 | 0.02892 | 1.80 | 0.073 | -0.00362 | 0.00247 | -1.47 | 0.143 | 0.6343 |
| Fuel, light, and water | 0.22582 | 0.05144 | 4.39 | 0.000 | -0.01126 | 0.00441 | -2.55 | 0.011 | 0.8812 |
| Transport and communication | -0.33086 | 0.05188 | -6.38 | 0.000 | 0.03271 | 0.00447 | 7.32 | 0.000 | 1.6581 |
| Household operations | 0.03121 | 0.01859 | 1.68 | 0.094 | -0.00136 | 0.00160 | -0.85 | 0.396 | 0.9118 |
| Personal care and effects | -0.01272 | 0.02689 | -0.47 | 0.636 | 0.00491 | 0.00233 | 2.10 | 0.036 | 1.1105 |
| Clothing, footwear, and other <br> wear | -0.01935 | 0.02163 | -0.89 | 0.372 | 0.00340 | 0.00185 | 1.83 | 0.068 | 1.1683 |
| Education | -0.08487 | 0.01943 | -4.37 | 0.000 | 0.00789 | 0.00173 | 4.57 | 0.000 | 2.1429 |
| Recreation | -0.02058 | 0.01192 | -1.73 | 0.085 | 0.00196 | 0.00105 | 1.87 | 0.063 | 1.8915 |
| Medical care | 0.03263 | 0.03966 | 0.82 | 0.411 | -0.00148 | 0.00342 | -0.43 | 0.665 | 0.9038 |
| Nondurable furnishings | -0.00506 | 0.00274 | -1.85 | 0.065 | 0.00053 | 0.00024 | 2.21 | 0.028 | 1.4787 |
| Durable furnishings | -0.18599 | 0.07336 | -2.54 | 0.012 | 0.01677 | 0.00648 | 2.59 | 0.010 | 2.8230 |
| Taxes paid | -0.08319 | 0.02258 | -3.68 | 0.000 | 0.00746 | 0.00200 | 3.74 | 0.000 | 3.0175 |
| Rental value of dwelling unit | 0.91900 | 0.13748 | 6.68 | 0.000 | -0.06374 | 0.01186 | -5.37 | 0.000 | 0.6407 |
| House maintenance and minor <br> repairs | -0.00361 | 0.01169 | -0.31 | 0.758 | 0.00045 | 0.00099 | 0.46 | 0.648 | 1.2674 |
| Special occasions of the family | -0.03866 | 0.02285 | -1.69 | 0.092 | 0.00423 | 0.00196 | 2.16 | 0.032 | 1.3993 |
| Gifts and contributions to others | -0.12584 | 0.05537 | -2.27 | 0.024 | 0.01220 | 0.00479 | 2.55 | 0.011 | 1.7579 |
| Other expenditures | -0.12575 | 0.01994 | -6.31 | 0.000 | 0.0152 | 0.00173 | 6.66 | 0.000 | 2.3876 |

Table 9. Basic Working-Leser Engel Curves and Estimated Income Elasticities of Metro Manila Poor Households, 2009

| Consumption Items | Constant | Standard <br> Error | $t$ Value | $p$ Value | Log of <br> Income | Standard <br> Error | $t$ Value | $p$ Value | Income <br> Elasticity |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Food | 1.23479 | 0.20840 | 5.93 | 0.000 | -0.06321 | 0.01790 | -3.53 | 0.000 | 0.8734 |
| Alcoholic beverages | 0.02735 | 0.04400 | 0.62 | 0.535 | -0.00158 | 0.00377 | -0.42 | 0.676 | 0.8245 |
| Tobacco | 0.06182 | 0.02712 | 2.28 | 0.023 | -0.00449 | 0.00231 | -1.94 | 0.053 | 0.5292 |
| Fuel, light, and water | 0.30448 | 0.06043 | 5.04 | 0.000 | -0.01812 | 0.00517 | -3.50 | 0.001 | 0.8066 |
| Transport and communication | -0.27968 | 0.05954 | -4.70 | 0.000 | 0.02830 | 0.00513 | 5.51 | 0.000 | 1.5703 |
| Household operations | 0.04192 | 0.01737 | 2.41 | 0.016 | -0.00230 | 0.00149 | -1.54 | 0.125 | 0.8482 |
| Personal care and effects | 0.02992 | 0.03268 | 0.92 | 0.361 | 0.00121 | 0.00280 | 0.43 | 0.666 | 1.0275 |
| Clothing, footwear, and other <br> wear | -0.00544 | 0.02272 | -0.24 | 0.811 | 0.00219 | 0.00195 | 1.13 | 0.262 | 1.1093 |
| Education | -0.08355 | 0.01955 | -4.27 | 0.000 | 0.00778 | 0.00173 | 4.49 | 0.000 | 2.1169 |
| Recreation | -0.01777 | 0.01020 | -1.74 | 0.083 | 0.00172 | 0.00090 | 1.91 | 0.057 | 1.7832 |
| Medical care | 0.02512 | 0.04380 | 0.57 | 0.567 | -0.00083 | 0.00380 | -0.22 | 0.828 | 0.9466 |
| Nondurable furnishings | -0.00290 | 0.00280 | -1.04 | 0.301 | 0.00034 | 0.00024 | 1.40 | 0.164 | 1.3262 |
| Durable furnishings | -0.25233 | 0.12484 | -2.02 | 0.044 | 0.02266 | 0.01103 | 2.06 | 0.041 | 3.0067 |
| Taxes paid | -0.08260 | 0.02316 | -3.57 | 0.000 | 0.00741 | 0.00205 | 3.62 | 0.000 | 3.0396 |
| Rental value of dwelling unit | 1.11802 | 0.15705 | 7.12 | 0.000 | -0.08109 | 0.01351 | -6.00 | 0.000 | 0.5355 |
| House maintenance and minor <br> repairs | -0.00160 | 0.01092 | -0.15 | 0.883 | 0.00028 | 0.00093 | 0.30 | 0.766 | 1.1719 |
| Special occasions of the family | -0.03504 | 0.02405 | -1.46 | 0.146 | 0.00391 | 0.00206 | 1.90 | 0.059 | 1.3740 |
| Gifts and contributions to others | -0.08904 | 0.06008 | -1.48 | 0.140 | 0.00896 | 0.00515 | 1.74 | 0.083 | 1.5900 |
| Other expenditures | -0.12175 | 0.01988 | -6.12 | 0.000 | 0.01116 | 0.00172 | 6.47 | 0.000 | 2.3792 |
| Savings | -0.87172 | 0.33553 | -2.60 | 0.010 | 0.07570 | 0.02871 | 2.64 | 0.009 | 9.3401 |

Table 10. Augmented Working-Leser Food Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | -0.14893 | 0.01898 | -7.850 | 0.000 | -0.07421 | 0.01301 | -5.700 | 0.000 |
| Members of household younger <br> than 1 year | 0.01731 | 0.01449 | 1.190 | 0.232 | 0.01723 | 0.01141 | 1.510 | 0.131 |
| Members of household who are 1 <br> to 6 years old | 0.02730 | 0.00496 | 5.500 | 0.000 | 0.02789 | 0.00391 | 7.140 | 0.000 |
| Members of household who are 7 <br> to 14 years old | 0.03501 | 0.00386 | 9.080 | 0.000 | 0.02708 | 0.00305 | 8.870 | 0.000 |
| Members of household who are <br> 15 to 24 years old | 0.03519 | 0.00513 | 6.860 | 0.000 | 0.02847 | 0.00405 | 7.030 | 0.000 |
| Members of household who are <br> 25 to 59 years old | 0.03718 | 0.00663 | 5.600 | 0.000 | 0.03770 | 0.00518 | 7.270 | 0.000 |
| Members of household who are <br> 60 years and over | -0.00405 | 0.00926 | -0.440 | 0.662 | 0.00270 | 0.00725 | 0.370 | 0.710 |
| Number of nonrelative members <br> of household | 0.01691 | 0.01434 | 1.180 | 0.238 | -0.00134 | 0.01130 | -0.120 | 0.906 |
| Male household head (dummy) | -0.01221 | 0.01100 | -1.110 | 0.267 | -0.00805 | 0.00865 | -0.930 | 0.352 |
| Household head is jobless <br> (dummy) | 0.00076 | 0.00993 | 0.080 | 0.939 | -0.01451 | 0.00781 | -1.860 | 0.063 |
| Household head is 45 years old <br> and older (dummy) | -0.02119 | 0.00958 | -2.210 | 0.027 | -.00706 | 0.00757 | -0.930 | 0.351 |
| Single household head (dummy) | -0.02874 | 0.01869 | -1.540 | 0.124 | -0.01438 | 0.01471 | -0.980 | 0.328 |

Table 10 continued...

| Married household head (dummy) | 0.02687 | 0.01640 | 1.640 | 0.101 | 0.00208 | 0.01293 | 0.160 | 0.872 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Widowed household head <br> (dummy) | 0.02004 | 0.01748 | 1.150 | 0.252 | 0.01196 | 0.01375 | 0.870 | 0.384 |
| At most elementary graduate <br> (dummy) | -0.01008 | 0.00926 | -1.090 | 0.276 | 0.01108 | 0.00733 | 1.510 | 0.131 |
| At most high school graduate <br> (dummy) | -0.04351 | 0.01152 | -3.780 | 0.000 | -0.01826 | 0.00911 | -2.010 | 0.045 |
| With some college education <br> (dummy) | -0.00995 | 0.01339 | -0.740 | 0.457 | -0.01518 | 0.01054 | -1.440 | 0.150 |
| At least college graduate <br> (dummy) | 0.02176 | 0.02080 | 1.050 | 0.295 | 0.00217 | 0.01639 | 0.130 | 0.895 |
| Single type of household <br> (dummy) | 0.04208 | 0.01372 | 3.070 | 0.002 | 0.03464 | 0.01081 | 3.200 | 0.001 |
| Household in the poorest decile <br> (dummy) | 0.00467 | 0.01029 | 0.450 | 0.650 | 0.00708 | 0.00725 | 0.980 | 0.329 |
| Household in Metro Manila <br> District 2 (dummy) | 0.02718 | 0.01221 | 2.230 | 0.026 | 0.00510 | 0.00962 | 0.530 | 0.596 |
| Household in Metro Manila <br> District 3 (dummy) | -0.00117 | 0.01254 | -0.090 | 0.925 | -0.00341 | 0.00987 | -0.350 | 0.730 |
| Household in Metro Manila <br> District 4 (dummy) | 0.02900 | 0.01274 | 2.280 | 0.023 | -0.00066 | 0.01006 | -0.070 | 0.947 |
| Intercept | 2.07219 | 0.22333 | 9.280 | 0.000 | 1.23582 | 0.15205 | 8.130 | 0.000 |

Table 11. Augmented Working-Leser Alcoholic Beverages Income/Expenditure
Engel Curves Estimated via Seemingly Unrelated Regressions,
Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | -0.00684 | 0.00318 | -2.150 | 0.031 | -0.00425 | 0.00285 | -1.490 | 0.136 |
| Members of household younger than <br> 1 year | -0.00093 | 0.00243 | -0.380 | 0.701 | -0.00097 | 0.00250 | -0.390 | 0.697 |
| Members of household who are 1 to 6 <br> years old | -0.00162 | 0.00083 | -1.950 | 0.051 | -0.00164 | 0.00086 | -1.910 | 0.056 |
| Members of household who are 7 to 14 <br> years old | -0.00157 | 0.00065 | -2.440 | 0.015 | -0.00170 | 0.00067 | -2.530 | 0.011 |
| Members of household who are 15 to 24 <br> years old | -0.00143 | 0.00086 | -1.660 | 0.097 | -0.00153 | 0.00089 | -1.730 | 0.084 |
| Members of household who are 25 to 59 <br> years old | 0.00263 | 0.00111 | 2.360 | 0.018 | 0.00238 | 0.00114 | 2.100 | 0.036 |
| Members of household who are 60 <br> years and older | -0.00138 | 0.00155 | -0.890 | 0.373 | -0.00164 | 0.00159 | -1.030 | 0.302 |
| Number of nonrelative members of <br> household | -0.00027 | 0.00240 | -0.110 | 0.911 | -0.00049 | 0.00248 | -0.200 | 0.842 |
| Male household head (dummy) | 0.00728 | 0.00184 | 3.950 | 0.000 | 0.00786 | 0.00190 | 4.140 | 0.000 |
| Household head is jobless (dummy) | 0.00122 | 0.00166 | 0.730 | 0.464 | 0.00096 | 0.00171 | 0.560 | 0.577 |
| Household head is 45 years old and <br> older (dummy) | -0.00325 | 0.00160 | -2.030 | 0.043 | -0.00313 | 0.00166 | -1.890 | 0.059 |
| Single household head (dummy) | -0.00126 | 0.00313 | -0.400 | 0.687 | -0.00089 | 0.00322 | -0.270 | 0.784 |

Table 11 continued...

| Married household head (dummy) | -0.00278 | 0.00275 | -1.010 | 0.311 | -0.00343 | 0.00284 | -1.210 | 0.226 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Widowed household head (dummy) | 0.00197 | 0.00293 | 0.670 | 0.501 | 0.00247 | 0.00301 | 0.820 | 0.413 |
| At most elementary graduate (dummy) | 0.00078 | 0.00155 | 0.510 | 0.613 | 0.00123 | 0.00161 | 0.760 | 0.444 |
| At most high school graduate (dummy) | 0.00306 | 0.00193 | 1.580 | 0.113 | 0.00337 | 0.00200 | 1.690 | 0.092 |
| With some college education (dummy) | -0.00152 | 0.00224 | -0.680 | 0.498 | -0.00206 | 0.00231 | -0.890 | 0.373 |
| At least college graduate (dummy) | 0.00089 | 0.00348 | 0.260 | 0.797 | -0.00111 | 0.00359 | -0.310 | 0.758 |
| Single type of household (dummy) | 0.00020 | 0.00230 | 0.090 | 0.931 | -0.00017 | 0.00237 | -0.070 | 0.943 |
| Household in the poorest decile <br> (dummy) | -0.00411 | 0.00172 | -2.390 | 0.017 | -0.00406 | 0.00159 | -2.550 | 0.011 |
| Household in Metro Manila District 2 <br> (dummy) | -0.00190 | 0.00204 | -0.930 | 0.353 | -0.00249 | 0.00211 | -1.180 | 0.237 |
| Household in Metro Manila District 3 <br> (dummy) | -0.00215 | 0.00210 | -1.020 | 0.307 | -0.00249 | 0.00216 | -1.150 | 0.250 |
| Household in Metro Manila District 4 <br> (dummy) | -0.00279 | 0.00213 | -1.310 | 0.191 | -0.00369 | 0.00221 | -1.670 | 0.095 |
| Intercept | 0.08866 | 0.03739 | 2.370 | 0.018 | 0.05986 | 0.03334 | 1.800 | 0.073 |

Table 12. Augmented Working-Leser Cigarette and Tobacco Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | -0.00551 | 0.00268 | -2.060 | 0.040 | -0.00734 | 0.00240 | -3.060 | 0.002 |
| Members of household younger than <br> 1 year | 0.00018 | 0.00204 | 0.090 | 0.931 | -0.00012 | 0.00210 | -0.060 | 0.953 |
| Members of household who are 1 to <br> 6 years old | -0.00040 | 0.00070 | -0.570 | 0.570 | -0.00030 | 0.00072 | -0.410 | 0.681 |
| Members of household who are 7 to <br> 14 <br> years old | -0.00113 | 0.00054 | -2.080 | 0.037 | -0.00107 | 0.00056 | -1.900 | 0.058 |
| Members of household who are 15 to <br> 24 years old | 0.00089 | 0.00072 | 1.230 | 0.221 | 0.00100 | 0.00075 | 1.350 | 0.178 |
| Members of household who are 25 to <br> 59 <br> 5 | 0.00197 | 0.00094 | 2.100 | 0.035 | 0.00207 | 0.00095 | 2.170 | 0.030 |
| Members of household who are 60 <br> years and older | 0.00013 | 0.00131 | 0.100 | 0.922 | 0.00041 | 0.00134 | 0.310 | 0.759 |
| Number of nonrelative members of <br> household | -0.00033 | 0.00202 | -0.160 | 0.869 | -0.00034 | 0.00208 | -0.160 | 0.870 |
| Male household head (dummy) | 0.00639 | 0.00155 | 4.120 | 0.000 | 0.00667 | 0.00159 | 4.190 | 0.000 |
| Household head is jobless (dummy) | -0.00029 | 0.00140 | -0.210 | 0.836 | -0.00059 | 0.00144 | -0.410 | 0.682 |
| Household head is 45 years old and <br> older (dummy) | -0.00306 | 0.00135 | -2.260 | 0.024 | -0.00330 | 0.00139 | -2.360 | 0.018 |
| Single household head (dummy) | -0.00286 | 0.00264 | -1.080 | 0.278 | -0.00200 | 0.00271 | -0.740 | 0.460 |

Table 12 continued...

| Married household head (dummy) | -0.00407 | 0.00231 | -1.760 | 0.078 | -0.00390 | 0.00238 | -1.640 | 0.101 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Widowed household head (dummy) | -0.00226 | 0.00247 | -0.920 | 0.359 | -0.00201 | 0.00253 | -0.790 | 0.428 |
| At most elementary graduate (dummy) | 0.00152 | 0.00131 | 1.170 | 0.243 | 0.00183 | 0.00135 | 1.350 | 0.176 |
| At most high school graduate (dummy) | 0.00093 | 0.00163 | 0.570 | 0.567 | 0.00111 | 0.00168 | 0.660 | 0.508 |
| With some college education (dummy) | -0.00119 | 0.00189 | -0.630 | 0.529 | -0.00118 | 0.00194 | -0.610 | 0.545 |
| At least college graduate (dummy) | -0.00139 | 0.00293 | -0.470 | 0.636 | -0.00245 | 0.00302 | -0.810 | 0.417 |
| Single type of household (dummy) | 0.00039 | 0.00194 | 0.200 | 0.839 | 0.00037 | 0.00199 | 0.190 | 0.852 |
| Household in the poorest decile <br> (dummy) | 0.00122 | 0.00145 | 0.840 | 0.402 | 0.00024 | 0.00134 | 0.180 | 0.860 |
| Household in Metro Manila District 2 <br> (dummy) | -0.00313 | 0.00172 | -1.820 | 0.069 | -0.00368 | 0.00177 | -2.080 | 0.038 |
| Household in Metro Manila District 3 <br> (dummy) | -0.00293 | 0.00177 | -1.660 | 0.098 | -0.00337 | 0.00182 | -1.850 | 0.064 |
| Household in Metro Manila District 4 <br> (dummy) | -0.00464 | 0.00180 | -2.580 | 0.010 | -0.00537 | 0.00185 | -2.900 | 0.004 |
| Intercept | 0.07316 | 0.03150 | 2.320 | 0.020 | 0.09491 | 0.02801 | 3.390 | 0.001 |

Table 13. Augmented Working-Leser Fuel, Light, and Water Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |  |
| Log of income/expenditure | -0.01782 | 0.00656 | -2.720 | 0.007 | -0.00726 | 0.00551 | -1.320 | 0.187 |  |
| Members of household younger than 1 <br> year | -0.00850 | 0.00501 | -1.700 | 0.090 | -0.00794 | 0.00483 | -1.640 | 0.100 |  |
| Members of household who are 1 to 6 <br> years old | 0.00170 | 0.00171 | 0.990 | 0.322 | 0.00130 | 0.00165 | 0.780 | 0.433 |  |
| Members of household who are 7 to 14 <br> years old | 0.00347 | 0.00133 | 2.600 | 0.009 | 0.00195 | 0.00129 | 1.510 | 0.132 |  |
| Members of household who are 15 to 24 <br> years old | 0.00337 | 0.00177 | 1.900 | 0.057 | 0.00181 | 0.00171 | 1.050 | 0.292 |  |
| Members of household who are 25 to 59 <br> years old | 0.00428 | 0.00229 | 1.860 | 0.062 | 0.00481 | 0.00219 | 2.190 | 0.028 |  |
| Members of household who are 60 years <br> and older | 0.01039 | 0.00320 | 3.250 | 0.001 | 0.01242 | 0.00307 | 4.050 | 0.000 |  |
| Number of nonrelative members of <br> household | 0.00958 | 0.00496 | 1.930 | 0.053 | 0.00588 | 0.00478 | 1.230 | 0.219 |  |
| Male household head (dummy) | -0.00437 | 0.00380 | -1.150 | 0.250 | -0.00502 | 0.00366 | -1.370 | 0.170 |  |
| Household head is jobless (dummy) | 0.00257 | 0.00343 | 0.750 | 0.454 | -0.00028 | 0.00331 | -0.080 | 0.933 |  |
| Household head is 45 years old and older <br> (dummy) | 0.00772 | 0.00331 | 2.330 | 0.020 | 0.01040 | 0.00320 | 3.250 | 0.001 |  |
| Single household head (dummy) | 0.00409 | 0.00646 | 0.630 | 0.527 | 0.00892 | 0.00622 | 1.430 | 0.152 |  |

Table 13 continued...

| Married household head (dummy) | 0.01735 | 0.00567 | 3.060 | 0.002 | 0.01356 | 0.00547 | 2.480 | 0.013 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :--- |
| Widowed household head (dummy) | 0.00354 | 0.00604 | 0.590 | 0.558 | 0.00154 | 0.00582 | 0.270 | 0.791 |
| At most elementary graduate (dummy) | -0.00694 | 0.00320 | -2.170 | 0.030 | -0.00283 | 0.00310 | -0.910 | 0.362 |
| At most high school graduate (dummy) | -0.00546 | 0.00398 | -1.370 | 0.171 | -0.00105 | 0.00386 | -0.270 | 0.785 |
| With some college education (dummy) | 0.00323 | 0.00463 | 0.700 | 0.486 | 0.00292 | 0.00446 | 0.650 | 0.513 |
| At least college graduate (dummy) | 0.00761 | 0.00719 | 1.060 | 0.290 | 0.00200 | 0.00694 | 0.290 | 0.773 |
| Single type of household (dummy) | -0.00221 | 0.00474 | -0.470 | 0.642 | -0.00284 | 0.00458 | -0.620 | 0.534 |
| Household in the poorest decile (dummy) | 0.00772 | 0.00356 | 2.170 | 0.030 | 0.00674 | 0.00307 | 2.200 | 0.028 |
| Household in Metro Manila District 2 <br> (dummy) | 0.01400 | 0.00422 | 3.320 | 0.001 | 0.01059 | 0.00407 | 2.600 | 0.009 |
| Household in Metro Manila District 3 <br> (dummy) | 0.01161 | 0.00433 | 2.680 | 0.007 | 0.01125 | 0.00418 | 2.690 | 0.007 |
| Household in Metro Manila District 4 <br> (dummy) | 0.01766 | 0.00440 | 4.010 | 0.000 | 0.01262 | 0.00426 | 2.960 | 0.003 |
| Intercept | 0.26087 | 0.07718 | 3.380 | 0.001 | 0.14413 | 0.06436 | 2.240 | 0.025 |

Table 14. Augmented Working-Leser Transportation and Communication Income/ Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Stdandard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.01049 | 0.00717 | 1.460 | 0.144 | 0.02010 | 0.00591 | 3.400 | 0.001 |
| Members of household younger than <br> 1 year | 0.00000 | 0.00548 | 0.000 | 0.999 | 0.00003 | 0.00518 | 0.010 | 0.995 |
| Members of household who are 1 to 6 <br> years old | -0.00089 | 0.00188 | -0.470 | 0.637 | -0.00093 | 0.00177 | -0.530 | 0.599 |
| Members of household who are 7 to 14 <br> years old | 0.00114 | 0.00146 | 0.780 | 0.434 | -0.00052 | 0.00139 | -0.380 | 0.707 |
| Members of household who are 15 to 24 <br> years old | 0.00180 | 0.00194 | 0.930 | 0.354 | 0.00038 | 0.00184 | 0.200 | 0.838 |
| Members of household who are 25 to <br> 59 <br> 59 <br> years old | -0.00027 | 0.00251 | -0.110 | 0.916 | -0.00087 | 0.00235 | -0.370 | 0.712 |
| Members of household who are 60 <br> years and older | -0.00668 | 0.00350 | -1.910 | 0.056 | -0.00567 | 0.00329 | -1.720 | 0.085 |
| Number of nonrelative members of <br> household | 0.00659 | 0.00542 | 1.220 | 0.224 | 0.00447 | 0.00513 | 0.870 | 0.384 |
| Male household head (dummy) | -0.00573 | 0.00416 | -1.380 | 0.168 | -0.00427 | 0.00393 | -1.090 | 0.277 |
| Household head is jobless (dummy) | -0.00058 | 0.00375 | -0.150 | 0.877 | -0.00282 | 0.00355 | -0.800 | 0.426 |
| Household head is 45 years old and <br> older (dummy) | -0.00835 | 0.00362 | -2.310 | 0.021 | -0.00625 | 0.00344 | -1.820 | 0.069 |
| Single household head (dummy) | -0.00696 | 0.00706 | -0.990 | 0.324 | -0.00393 | 0.00668 | -0.590 | 0.557 |

Table 14 continued...

| Married household head (dummy) | 0.00607 | 0.00620 | 0.980 | 0.327 | 0.00326 | 0.00587 | 0.550 | 0.579 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Widowed household head (dummy) | -0.00919 | 0.00661 | -1.390 | 0.164 | -0.01005 | 0.00624 | -1.610 | 0.108 |
| At most elementary graduate (dummy) | -0.00054 | 0.00350 | -0.160 | 0.876 | 0.00228 | 0.00333 | 0.680 | 0.493 |
| At most high school graduate (dummy) | -0.00582 | 0.00435 | -1.340 | 0.181 | -0.00165 | 0.00414 | -0.400 | 0.690 |
| With some college education (dummy) | -0.00012 | 0.00506 | -0.020 | 0.981 | -0.00025 | 0.00479 | -0.050 | 0.959 |
| At least college graduate (dummy) | 0.01815 | 0.00786 | 2.310 | 0.021 | 0.01598 | 0.00744 | 2.150 | 0.032 |
| Single type of household (dummy) | 0.00129 | 0.00519 | 0.250 | 0.803 | -0.00133 | 0.00491 | -0.270 | 0.786 |
| Household in the poorest decile <br> (dummy) | -0.00154 | 0.00389 | -0.400 | 0.693 | -0.00163 | 0.00329 | -0.490 | 0.622 |
| Household in Metro Manila District 2 <br> (dummy) | 0.00415 | 0.00462 | 0.900 | 0.368 | 0.00158 | 0.00437 | 0.360 | 0.717 |
| Household in Metro Manila District 3 <br> (dummy) | -0.00016 | 0.00474 | -0.030 | 0.973 | -0.00129 | 0.00448 | -0.290 | 0.773 |
| Household in Metro Manila District 4 <br> (dummy) | 0.01794 | 0.00481 | 3.730 | 0.000 | 0.01296 | 0.00457 | 2.840 | 0.005 |
| Intercept | -0.07204 | 0.08441 | -0.850 | 0.393 | -0.17702 | 0.06905 | -2.560 | 0.010 |

Table 15. Augmented Working-Leser Household Operations Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila

Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.00297 | 0.00256 | 1.160 | 0.247 | 0.00311 | 0.00213 | 1.460 | 0.145 |
| Members of household younger than 1 year | -0.00075 | 0.00196 | -0.380 | 0.701 | -0.00072 | 0.00187 | -0.390 | 0.700 |
| Members of household who are 1 to 6 years old | -0.00065 | 0.00067 | -0.970 | 0.330 | -0.00062 | 0.00064 | -0.960 | 0.335 |
| Members of household who are 7 to 14 years old | 0.00008 | 0.00052 | 0.140 | 0.885 | -0.00018 | 0.00050 | -0.350 | 0.725 |
| Members of household who are 15 to 24 years old | -0.00039 | 0.00069 | $-0.560$ | 0.577 | -0.00058 | 0.00066 | -0.870 | 0.384 |
| Members of household who are 25 to 59 years old | 0.00088 | 0.00090 | 0.980 | 0.325 | 0.00068 | 0.00085 | 0.810 | 0.421 |
| Members of household who are 60 years and older | 0.00160 | 0.00125 | 1.280 | 0.200 | 0.00195 | 0.00119 | 1.640 | 0.100 |
| Number of nonrelative members of household | 0.00347 | 0.00194 | 1.790 | 0.073 | 0.00256 | 0.00185 | 1.380 | 0.166 |
| Male household head (dummy) | 0.00025 | 0.00148 | 0.170 | 0.867 | 0.00038 | 0.00142 | 0.270 | 0.790 |
| Household head is jobless (dummy) | 0.00026 | 0.00134 | 0.190 | 0.848 | -0.00059 | 0.00128 | -0.460 | 0.643 |
| Household head is 45 years old and older (dummy) | -0.00082 | 0.00129 | -0.640 | 0.525 | -0.00018 | 0.00124 | -0.140 | 0.886 |
| Single household head (dummy) | 0.00231 | 0.00252 | 0.910 | 0.360 | 0.00320 | 0.00241 | 1.330 | 0.184 |
| Married household head (dummy) | -0.00014 | 0.00221 | -0.060 | 0.950 | -0.00067 | 0.00212 | -0.320 | 0.751 |

Table 15 continued...

| Widowed household head (dummy) | 0.00098 | 0.00236 | 0.410 | 0.678 | 0.00083 | 0.00225 | 0.370 | 0.713 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| At most elementary graduate (dummy) | 0.00014 | 0.00125 | 0.110 | 0.911 | 0.00044 | 0.00120 | 0.370 | 0.714 |
| At most high school graduate (dummy) | -0.00120 | 0.00156 | -0.770 | 0.440 | -0.00049 | 0.00149 | -0.330 | 0.742 |
| With some college education (dummy) | 0.00142 | 0.00181 | 0.780 | 0.434 | 0.00109 | 0.00173 | 0.630 | 0.528 |
| At least college graduate (dummy) | 0.00773 | 0.00281 | 2.750 | 0.006 | 0.00528 | 0.00268 | 1.970 | 0.049 |
| Single type of household (dummy) | 0.00235 | 0.00185 | 1.270 | 0.205 | 0.00206 | 0.00177 | 1.160 | 0.244 |
| Household in the poorest decile (dummy) | 0.00347 | 0.00139 | 2.500 | 0.012 | 0.00229 | 0.00119 | 1.930 | 0.054 |
| Household in Metro Manila District 2 <br> (dummy) | 0.00218 | 0.00165 | 1.320 | 0.186 | 0.00146 | 0.00157 | 0.930 | 0.352 |
| Household in Metro Manila District 3 <br> (dummy) | 0.00433 | 0.00169 | 2.550 | 0.011 | 0.00411 | 0.00162 | 2.540 | 0.011 |
| Household in Metro Manila District 4 <br> (dummy) | 0.00078 | 0.00172 | 0.460 | 0.649 | -0.00035 | 0.00165 | -0.210 | 0.832 |
| Intercept | -0.02717 | 0.03015 | -0.900 | 0.368 | -0.02655 | 0.02489 | -1.070 | 0.286 |

Table 16. Augmented Working-Leser Personal Care and Effects Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | -0.00274 | 0.00341 | -0.800 | 0.423 | -0.00074 | 0.00282 | -0.260 | 0.794 |
| Members of household younger than <br> 1 year | 0.01189 | 0.00261 | 4.560 | 0.000 | 0.01168 | 0.00248 | 4.720 | 0.000 |
| Members of household who are 1 to 6 <br> years old | 0.00298 | 0.00089 | 3.330 | 0.001 | 0.00315 | 0.00085 | 3.710 | 0.000 |
| Members of household who are 7 to 14 <br> years old | -0.00014 | 0.00069 | -0.200 | 0.842 | -0.00086 | 0.00066 | -1.290 | 0.196 |
| Members of household who are 15 to <br> 24 years old | 0.00267 | 0.00092 | 2.890 | 0.004 | 0.00210 | 0.00088 | 2.390 | 0.017 |
| Members of household who are 25 to <br> 59 | 0.00282 | 0.00119 | 2.360 | 0.018 | 0.00287 | 0.00113 | 2.550 | 0.011 |
| Members of household who are 60 <br> years and older | -0.00430 | 0.00167 | -2.580 | 0.010 | -0.00351 | 0.00157 | -2.230 | 0.026 |
| Number of nonrelative members of <br> household | 0.01073 | 0.00258 | 4.160 | 0.000 | 0.00976 | 0.00245 | 3.980 | 0.000 |
| Male household head (dummy) | -0.00986 | 0.00198 | -4.990 | 0.000 | -0.01035 | 0.00188 | -5.510 | 0.000 |
| Household head is jobless (dummy) | 0.00260 | 0.00179 | 1.460 | 0.145 | 0.00085 | 0.00170 | 0.500 | 0.616 |
| Household head is 45 years old and <br> older (dummy) | -0.00301 | 0.00172 | -1.740 | 0.081 | -0.00164 | 0.00164 | -1.000 | 0.319 |
| Single household head (dummy) | -0.00153 | 0.00336 | -0.450 | 0.650 | -0.00013 | 0.00319 | -0.040 | 0.969 |

Table 16 continued...

| Married household head (dummy) | 0.00871 | 0.00295 | 2.950 | 0.003 | 0.00696 | 0.00281 | 2.480 | 0.013 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Widowed household head (dummy) | 0.00389 | 0.00314 | 1.240 | 0.216 | 0.00227 | 0.00298 | 0.760 | 0.447 |
| At most elementary graduate (dummy) | -0.00301 | 0.00167 | -1.810 | 0.071 | -0.00115 | 0.00159 | -0.720 | 0.470 |
| At most high school graduate (dummy) | -0.00239 | 0.00207 | -1.150 | 0.250 | 0.00005 | 0.00198 | 0.030 | 0.979 |
| With some college education (dummy) | 0.00114 | 0.00241 | 0.470 | 0.636 | 0.00102 | 0.00229 | 0.450 | 0.656 |
| At least college graduate (dummy) | 0.00350 | 0.00374 | 0.930 | 0.350 | 0.00009 | 0.00356 | 0.020 | 0.981 |
| Single type of household (dummy) | -0.00065 | 0.00247 | -0.260 | 0.793 | -0.00163 | 0.00235 | -0.700 | 0.486 |
| Household in the poorest decile <br> (dummy) | 0.00416 | 0.00185 | 2.250 | 0.025 | 0.00231 | 0.00157 | 1.470 | 0.143 |
| Household in Metro Manila District 2 <br> (dummy) | 0.00354 | 0.00220 | 1.610 | 0.107 | 0.00079 | 0.00209 | 0.380 | 0.703 |
| Household in Metro Manila District 3 <br> (dummy) | 0.00513 | 0.00226 | 2.270 | 0.023 | 0.00444 | 0.00214 | 2.070 | 0.038 |
| Household in Metro Manila District 4 <br> (dummy) | 0.00762 | 0.00229 | 3.320 | 0.001 | 0.00446 | 0.00218 | 2.040 | 0.041 |
| Intercept | 0.06563 | 0.04018 | 1.630 | 0.102 | 0.04766 | 0.03301 | 1.440 | 0.149 |

Table 17. Augmented Working-Leser Recreation Income/Expenditure
Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard Error | z Value | $p$ Value |
| Log of income/expenditure | 0.00226 | 0.00152 | 1.490 | 0.136 | 0.00209 | 0.00143 | 1.460 | 0.145 |
| Members of household younger than 1 year | -0.00078 | 0.00116 | -0.680 | 0.499 | -0.00078 | 0.00126 | -0.620 | 0.535 |
| Members of household who are 1 to 6 years old | -0.00009 | 0.00040 | -0.220 | 0.827 | -0.00008 | 0.00043 | -0.180 | 0.858 |
| Members of household who are 7 to 14 years old | -0.00017 | 0.00031 | -0.540 | 0.589 | -0.00024 | 0.00034 | -0.710 | 0.476 |
| Members of household who are 15 to 24 years old | -0.00124 | 0.00041 | -3.030 | 0.002 | -0.00134 | 0.00045 | -3.010 | 0.003 |
| Members of household who are 25 to 59 years old | -0.00107 | 0.00053 | -2.030 | 0.043 | -0.00105 | 0.00057 | -1.840 | 0.066 |
| Members of household who are 60 years and older | -0.00091 | 0.00074 | -1.240 | 0.217 | -0.00088 | 0.00080 | -1.100 | 0.273 |
| Number of nonrelative members of household | -0.00034 | 0.0011 | -0.300 | 0.764 | -0.00056 | 0.00124 | -0.450 | 0.655 |
| Male household head (dummy) | 0.00027 | 0.00088 | 0.310 | 0.756 | 0.00028 | 0.00095 | 0.290 | 0.772 |
| Household head is jobless (dummy) | -0.00126 | 0.00079 | -1.590 | 0.113 | -0.00146 | 0.00086 | -1.700 | 0.089 |
| Household head is 45 years old and older (dummy) | -0.00041 | 0.00076 | -0.540 | 0.591 | -0.00034 | 0.00083 | -0.400 | 0.688 |
| Single household head (dummy) | -0.00062 | 0.00149 | -0.420 | 0.677 | -0.00061 | 0.00162 | -0.380 | 0.706 |
| Married household head (dummy) | 0.00021 | 0.00131 | 0.160 | 0.875 | -0.00007 | 0.00142 | -0.050 | 0.963 |
| Widowed household head (dummy) | 0.00186 | 0.00140 | 1.340 | 0.182 | 0.00175 | 0.00151 | 1.150 | 0.248 |
| At most elementary graduate (dummy) | -0.00047 | 0.00074 | -0.640 | 0.523 | -0.00015 | 0.00081 | -0.190 | 0.852 |
| At most high school graduate (dummy) | -0.00082 | 0.00092 | -0.890 | 0.371 | -0.00051 | 0.00100 | -0.510 | 0.610 |
| With some college education (dummy) | -0.00008 | 0.00107 | -0.080 | 0.937 | -0.00021 | 0.00116 | -0.180 | 0.857 |
| At least college graduate (dummy) | -0.00081 | 0.00166 | -0.490 | 0.626 | -0.00062 | 0.00181 | -0.340 | 0.731 |
| Single type of household (dummy) | -0.00465 | 0.00110 | -4.240 | 0.000 | -0.00496 | 0.00119 | -4.170 | 0.000 |
| Household in the poorest decile (dummy) | -0.00004 | 0.00082 | -0.050 | 0.962 | -0.00044 | 0.00080 | -0.550 | 0.584 |
| Household in Metro Manila District 2 (dummy) | -0.00121 | 0.00097 | -1.240 | 0.215 | -0.00114 | 0.00106 | -1.080 | 0.281 |
| Household in Metro Manila District 3 (dummy) | -0.00165 | 0.00100 | -1.650 | 0.100 | -0.00150 | 0.00109 | -1.380 | 0.167 |
| Household in Metro Manila District 4 (dummy) | -0.00183 | 0.00102 | -1.800 | 0.071 | -0.00187 | 0.00111 | -1.690 | 0.091 |
| _Intercept | -0.01582 | 0.01783 | -0.890 | 0.375 | -0.01319 | 0.01675 | -0.790 | 0.431 |

Table 18. Augmented Working-Leser Medical Care Income/Expenditure
Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.01366 | 0.00645 | 2.120 | 0.034 | 0.01496 | 0.00521 | 2.870 | 0.004 |
| Members of household younger than 1 year | 0.01537 | 0.00492 | 3.120 | 0.002 | 0.01594 | 0.00456 | 3.490 | 0.000 |
| Members of household who are 1 to 6 years old | -0.00122 | 0.00168 | -0.730 | 0.468 | -0.00071 | 0.00156 | -0.450 | 0.649 |
| Members of household who are 7 to 14 years old | -0.00088 | 0.00131 | -0.670 | 0.504 | -0.00117 | 0.00122 | -0.960 | 0.339 |
| Members of household who are 15 to 24 years old | -0.00235 | 0.00174 | -1.350 | 0.177 | -0.00241 | 0.00162 | -1.490 | 0.137 |
| Members of household who are 25 to 59 years old | -0.00717 | 0.00225 | -3.180 | 0.001 | -0.00796 | 0.00207 | -3.840 | 0.000 |
| Members of household who are 60 years and older | 0.00594 | 0.00315 | 1.890 | 0.059 | 0.00619 | 0.00290 | 2.130 | 0.033 |
| Number of nonrelative members of household | -0.00259 | 0.00487 | -0.530 | 0.595 | -0.00413 | 0.00452 | -0.910 | 0.361 |
| Male household head (dummy) | $-0.00143$ | 0.00373 | -0.380 | 0.702 | -0.00155 | 0.00346 | -0.450 | 0.653 |
| Household head is jobless (dummy) | 0.00271 | 0.00337 | 0.800 | 0.422 | 0.00203 | 0.00313 | 0.650 | 0.516 |
| Household head is 45 years old and older (dummy) | 0.00528 | 0.00325 | 1.620 | 0.105 | 0.00711 | 0.00303 | 2.350 | 0.019 |
| Single household head (dummy) | 0.00663 | 0.00635 | 1.040 | 0.296 | 0.00909 | 0.00589 | 1.540 | 0.123 |
| Married household head (dummy) | 0.00807 | 0.00557 | 1.450 | 0.147 | 0.00760 | 0.00518 | 1.470 | 0.142 |
| Widowed household head (dummy) | 0.00303 | 0.00594 | 0.510 | 0.609 | 0.00365 | 0.00550 | 0.660 | 0.507 |
| At most elementary graduate (dummy) | -0.00313 | 0.00315 | $-1.000$ | 0.320 | -0.00160 | 0.00293 | -0.550 | 0.585 |
| At most high school graduate (dummy) | -0.00542 | 0.00391 | $-1.390$ | 0.166 | -0.00369 | 0.00364 | -1.010 | 0.311 |
| With some college education (dummy) | -0.00571 | 0.00455 | -1.260 | 0.209 | $-0.00489$ | 0.00422 | -1.160 | 0.246 |
| At least college graduate (dummy) | 0.00328 | 0.00706 | 0.460 | 0.642 | 0.00479 | 0.00656 | 0.730 | 0.465 |
| Single type of household (dummy) | -0.00227 | 0.00466 | -0.490 | 0.626 | -0.00228 | 0.00433 | -0.530 | 0.598 |
| Household in the poorest decile (dummy) | 0.00446 | 0.00349 | 1.280 | 0.202 | 0.00417 | 0.00290 | 1.440 | 0.151 |
| Household in Metro Manila District 2 (dummy) | 0.00659 | 0.00415 | 1.590 | 0.112 | 0.00463 | 0.00385 | 1.200 | 0.229 |
| Household in Metro Manila District 3 (dummy) | 0.00823 | 0.00426 | 1.930 | 0.053 | 0.00820 | 0.00395 | 2.080 | 0.038 |
| Household in Metro Manila District 4 (dummy) | 0.00358 | 0.00432 | 0.830 | 0.407 | 0.00288 | 0.00403 | 0.720 | 0.475 |
| _Intercept | -0.14531 | 0.07584 | -1.920 | 0.055 | -0.15945 | 0.06085 | -2.620 | 0.009 |

Table 19. Augmented Working-Leser Nondurable Furnishings Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions,

Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | $p$ Value | Coefficient | Standard Error | z Value | $p$ Value |
| Log of income/expenditure | 0.00012 | 0.00042 | 0.270 | 0.785 | -0.00026 | 0.00039 | -0.660 | 0.509 |
| Members of household younger than 1 year | -0.00039 | 0.00032 | -1.200 | 0.231 | -0.00041 | 0.00034 | -1.180 | 0.238 |
| Members of household who are 1 to 6 years old | 0.00013 | 0.00011 | 1.210 | 0.226 | 0.00010 | 0.00012 | 0.830 | 0.408 |
| Members of household who are 7 to 14 years old | -0.00017 | 0.00009 | -1.980 | 0.048 | -0.00018 | 0.00009 | -1.950 | 0.051 |
| Members of household who are 15 to 24 years old | 0.00008 | 0.00011 | 0.660 | 0.506 | 0.00010 | 0.00012 | 0.820 | 0.415 |
| Members of household who are 25 to 59 years old | -0.00001 | 0.00015 | -0.060 | 0.951 | 0.00007 | 0.00016 | 0.430 | 0.666 |
| Members of household who are 60 years and older | 0.00012 | 0.00021 | 0.600 | 0.546 | 0.00022 | 0.00022 | 1.030 | 0.304 |
| Number of nonrelative members of household | 0.00009 | 0.00032 | 0.270 | 0.788 | -0.00004 | 0.00034 | -0.110 | 0.913 |
| Male household head (dummy) | 0.00009 | 0.00024 | 0.380 | 0.706 | 0.00009 | 0.00026 | 0.360 | 0.722 |
| Household head is jobless (dummy) | 0.00012 | 0.00022 | 0.560 | 0.576 | 0.00006 | 0.00024 | 0.240 | 0.810 |
| Household head is 45 years old and older (dummy) | -0.00011 | 0.00021 | -0.510 | 0.612 | -0.00012 | 0.00023 | -0.530 | 0.598 |
| Single household head (dummy) | -0.00097 | 0.00042 | -2.330 | 0.020 | -0.00112 | 0.00044 | -2.530 | 0.011 |
| Married household head (dummy) | -0.00033 | 0.00036 | -0.900 | 0.366 | -0.00052 | 0.00039 | -1.330 | 0.182 |
| Widowed household head (dummy) | -0.00058 | 0.00039 | -1.500 | 0.134 | -0.00076 | 0.00041 | -1.840 | 0.066 |
| At most elementary graduate (dummy) | -0.00026 | 0.00021 | -1.250 | 0.211 | -0.00026 | 0.00022 | -1.160 | 0.244 |
| At most high school graduate (dummy) | 0.00017 | 0.00026 | 0.670 | 0.503 | 0.00017 | 0.00027 | 0.640 | 0.525 |
| With some college education (dummy) | 0.00006 | 0.00030 | 0.200 | 0.844 | 0.00012 | 0.00032 | 0.380 | 0.704 |
| At least college graduate (dummy) | 0.00047 | 0.00046 | 1.010 | 0.311 | 0.00060 | 0.00049 | 1.220 | 0.222 |
| Single type of household (dummy) | 0.00022 | 0.00031 | 0.710 | 0.476 | 0.00025 | 0.00033 | 0.760 | 0.448 |
| Household in the poorest decile (dummy) | -0.00001 | 0.00023 | -0.060 | 0.948 | -0.00024 | 0.00022 | -1.100 | 0.270 |
| Household in Metro Manila District 2 (dummy) | -0.00049 | 0.00027 | -1.790 | 0.073 | -0.00057 | 0.00029 | -1.960 | 0.050 |
| Household in Metro Manila District 3 (dummy) | -0.00029 | 0.00028 | -1.030 | 0.305 | -0.00032 | 0.00030 | -1.090 | 0.278 |
| Household in Metro Manila District 4 (dummy) | 0.00015 | 0.00028 | 0.510 | 0.608 | 0.00010 | 0.00030 | 0.340 | 0.735 |
| _Intercept | 0.00013 | 0.00496 | 0.030 | 0.979 | 0.00471 | 0.00458 | 1.030 | 0.304 |

Table 20. Augmented Working-Leser Durable Furnishings Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | p Value | Coefficient | Standard Error | z Value | p Value |
| Log of income/expenditure | 0.00788 | 0.00839 | 0.940 | 0.348 | 0.02523 | 0.00471 | 5.350 | 0.000 |
| Members of household younger than 1 year | -0.00203 | 0.00641 | -0.320 | 0.751 | -0.00108 | 0.00413 | -0.260 | 0.794 |
| Members of household who are 1 to 6 years old | -0.00300 | 0.00219 | -1.370 | 0.172 | -0.00208 | 0.00142 | -1.470 | 0.141 |
| Members of household who are 7 to 14 years old | -0.00173 | 0.00171 | -1.020 | 0.310 | -0.00217 | 0.00111 | -1.970 | 0.049 |
| Members of household who are 15 to 24 years old | -0.00103 | 0.00227 | -0.450 | 0.649 | -0.00215 | 0.00147 | -1.470 | 0.142 |
| Members of household who are 25 to 59 years old | -0.00042 | 0.00293 | -0.140 | 0.886 | -0.00189 | 0.00188 | -1.010 | 0.314 |
| Members of household who are 60 years and older | -0.00440 | 0.00409 | -1.070 | 0.283 | -0.00504 | 0.00263 | -1.920 | 0.055 |
| Number of nonrelative members of household | -0.00039 | 0.00634 | -0.060 | 0.951 | -0.00154 | 0.00409 | -0.380 | 0.706 |
| Male household head (dummy) | 0.00088 | 0.00486 | 0.180 | 0.856 | 0.00090 | 0.00313 | 0.290 | 0.775 |
| Household head is jobless (dummy) | -0.00112 | 0.00439 | -0.260 | 0.798 | -0.00181 | 0.00283 | -0.640 | 0.523 |
| Household head is 45 years old and older (dummy) | -0.00400 | 0.00424 | -0.940 | 0.345 | 0.00028 | 0.00274 | 0.100 | 0.918 |
| Single household head (dummy) | -0.00530 | 0.00826 | -0.640 | 0.521 | -0.00376 | 0.00533 | -0.710 | 0.480 |
| Married household head (dummy) | 0.00049 | 0.00725 | 0.070 | 0.946 | -0.00243 | 0.00469 | -0.520 | 0.604 |
| Widowed household head (dummy) | -0.00296 | 0.00773 | -0.380 | 0.702 | -0.00342 | 0.00498 | -0.690 | 0.493 |
| At most elementary graduate (dummy) | 0.00257 | 0.00410 | 0.630 | 0.530 | 0.00383 | 0.00266 | 1.440 | 0.149 |
| At most high school graduate (dummy) | -0.00154 | 0.00509 | -0.300 | 0.762 | 0.00115 | 0.00330 | 0.350 | 0.728 |
| With some college education (dummy) | -0.00458 | 0.00592 | -0.770 | 0.439 | -0.00373 | 0.00382 | -0.980 | 0.329 |
| At least college graduate (dummy) | -0.00739 | 0.00919 | -0.800 | 0.422 | -0.00751 | 0.00594 | -1.270 | 0.206 |
| Single type of household (dummy) | 0.00191 | 0.00607 | 0.320 | 0.752 | 0.00040 | 0.00392 | 0.100 | 0.918 |
| Household in the poorest decile (dummy) | -0.00724 | 0.00455 | -1.590 | 0.111 | -0.00067 | 0.00263 | -0.260 | 0.798 |
| Household in Metro Manila District 2 (dummy) | 0.01174 | 0.00540 | 2.170 | 0.030 | 0.00899 | 0.00348 | 2.580 | 0.010 |
| Household in Metro Manila District 3 (dummy) | 0.00754 | 0.00555 | 1.360 | 0.174 | 0.00584 | 0.00358 | 1.630 | 0.102 |
| Household in Metro Manila District 4 (dummy) | 0.00339 | 0.00563 | 0.600 | 0.547 | 0.00192 | 0.00365 | 0.530 | 0.599 |
| _Intercept | -0.08033 | 0.09874 | -0.810 | 0.416 | -0.28091 | 0.05509 | -5.100 | 0.000 |

Table 21. Augmented Working-Leser Education Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | p Value | Coefficient | Standard Error | z Value | p Value |
| Log of income/expenditure | 0.00295 | 0.00421 | 0.700 | 0.484 | 0.00609 | 0.00364 | 1.670 | 0.094 |
| Members of household younger than 1 year | -0.00488 | 0.00321 | -1.520 | 0.129 | -0.00473 | 0.00319 | -1.480 | 0.138 |
| Members of household who are 1 to 6 years old | -0.00126 | 0.00110 | -1.140 | 0.254 | -0.00128 | 0.00109 | -1.170 | 0.241 |
| Members of household who are 7 to 14 years old | 0.00195 | 0.00086 | 2.280 | 0.023 | 0.00163 | 0.00085 | 1.910 | 0.056 |
| Members of household who are 15 to 24 years old | 0.00334 | 0.00114 | 2.930 | 0.003 | 0.00282 | 0.00113 | 2.500 | 0.013 |
| Members of household who are 25 to 59 years old | -0.00136 | 0.00147 | -0.930 | 0.355 | -0.00153 | 0.00145 | -1.050 | 0.292 |
| Members of household who are 60 years and older | 0.00074 | 0.00205 | 0.360 | 0.718 | 0.00065 | 0.00203 | 0.320 | 0.748 |
| Number of nonrelative members of household | -0.00088 | 0.00318 | -0.280 | 0.782 | -0.00155 | 0.00316 | -0.490 | 0.624 |
| Male household head (dummy) | -0.00512 | 0.00244 | -2.100 | 0.036 | -0.00481 | 0.00242 | -1.990 | 0.047 |
| Household head is jobless (dummy) | 0.00019 | 0.00220 | 0.090 | 0.931 | 0.00001 | 0.00218 | 0.000 | 0.996 |
| Household head is 45 years old and older (dummy) | -0.00150 | 0.00212 | -0.710 | 0.480 | -0.00141 | 0.00212 | -0.670 | 0.505 |
| Single household head (dummy) | 0.00241 | 0.00414 | 0.580 | 0.561 | 0.00330 | 0.00411 | 0.800 | 0.423 |
| Married household head (dummy) | 0.00274 | 0.00364 | 0.750 | 0.452 | 0.00280 | 0.00361 | 0.770 | 0.438 |
| Widowed household head (dummy) | -0.00418 | 0.00388 | -1.080 | 0.281 | -0.00347 | 0.00384 | -0.900 | 0.367 |
| At most elementary graduate (dummy) | 0.00028 | 0.00205 | 0.140 | 0.892 | 0.00103 | 0.00205 | 0.500 | 0.614 |
| At most high school graduate (dummy) | 0.00067 | 0.00256 | 0.260 | 0.793 | 0.00161 | 0.00255 | 0.630 | 0.528 |
| With some college education (dummy) | 0.00488 | 0.00297 | 1.640 | 0.100 | 0.00431 | 0.00295 | 1.460 | 0.144 |
| At least college graduate (dummy) | -0.00195 | 0.00461 | -0.420 | 0.673 | -0.00293 | 0.00458 | -0.640 | 0.522 |
| Single type of household (dummy) | 0.00295 | 0.00304 | 0.970 | 0.332 | 0.00231 | 0.00302 | 0.770 | 0.444 |
| Household in the poorest decile (dummy) | -0.00207 | 0.00228 | -0.910 | 0.364 | -0.00156 | 0.00203 | -0.770 | 0.441 |
| Household in Metro Manila District 2 (dummy) | -0.00396 | 0.00271 | -1.460 | 0.144 | -0.00475 | 0.00269 | -1.770 | 0.077 |
| Household in Metro Manila District 3 (dummy) | -0.00344 | 0.00278 | -1.240 | 0.217 | -0.00388 | 0.00276 | -1.410 | 0.159 |
| Household in Metro Manila District 4 (dummy) | -0.00387 | 0.00282 | -1.370 | 0.171 | -0.00501 | 0.00281 | -1.780 | 0.075 |
| _Intercept | -0.02341 | 0.04953 | -0.470 | 0.636 | -0.05887 | 0.04249 | -1.390 | 0.166 |

Table 22. Augmented Working-Leser Taxes Income/Expenditure
Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard | $z$ Value | p Value |
| Log of income/expenditure | 0.00104 | 0.00274 | 0.380 | 0.704 | 0.00247 | 0.00238 | 1.040 | 0.299 |
| Members of household younger than 1 year | 0.00276 | 0.00209 | 1.320 | 0.187 | 0.00251 | 0.00208 | 1.200 | 0.229 |
| Members of household who are 1 to 6 years old | -0.00771 | 0.00072 | -2.380 | 0.017 | -0.00175 | 0.00071 | -2.450 | 0.014 |
| Members of household who are 7 to 14 years old | -0.00140 | 0.00056 | -2.520 | 0.012 | -0.00152 | 0.00056 | -2.730 | 0.006 |
| Members of household who are 15 to 24 years old | 0.00002 | 0.00074 | 0.020 | 0.984 | -0.00011 | 0.00074 | -0.160 | 0.877 |
| Members of household who are 25 to 59 years old | 0.00142 | 0.00096 | 1.480 | 0.139 | 0.00117 | 0.00095 | 1.230 | 0.218 |
| Members of household who are 60 years and older | 0.00040 | 0.00134 | 0.300 | 0.765 | 0.00027 | 0.00132 | 0.200 | 0.838 |
| Number of nonrelative members of household | -0.00068 | 0.00207 | -0.330 | 0.744 | $-0.00082$ | 0.00206 | -0.400 | 0.691 |
| Male household head (dummy) | 0.00205 | 0.00159 | 1.290 | 0.196 | 0.00212 | 0.00158 | 1.340 | 0.179 |
| Household head is jobless (dummy) | 0.00209 | 0.00143 | 1.460 | 0.144 | 0.00193 | 0.00143 | 1.350 | 0.177 |
| Household head is 45 years old and older (dummy) | -0.00356 | 0.00138 | -2.570 | 0.010 | -0.00349 | 0.00138 | -2.520 | 0.012 |
| Single household head (dummy) | 0.00622 | 0.00270 | 2.300 | 0.021 | 0.00673 | 0.00269 | 2.510 | 0.012 |
| Married household head (dummy) | -0.00071 | 0.00237 | -0.300 | 0.764 | $-0.00077$ | 0.00236 | -0.330 | 0.743 |
| Widowed household head (dummy) | 0.00056 | 0.00253 | 0.220 | 0.823 | 0.00068 | 0.00251 | 0.270 | 0.788 |
| At most elementary graduate (dummy) | -0.00133 | 0.00134 | -0.990 | 0.322 | -0.00009 | 0.00134 | -0.820 | 0.414 |
| At most high school graduate (dummy) | -0.00165 | 0.00167 | -0.990 | 0.320 | -0.00140 | 0.00166 | -0.840 | 0.401 |
| With some college education (dummy) | 0.00324 | 0.00194 | 1.670 | 0.094 | 0.00347 | 0.00193 | 1.800 | 0.072 |
| At least college graduate (dummy) | 0.00910 | 0.00301 | 3.030 | 0.002 | 0.00847 | 0.00299 | 2.830 | 0.005 |
| Single type of household (dummy) | -0.00043 | 0.00198 | -0.220 | 0.828 | -0.00052 | 0.00198 | -0.260 | 0.793 |
| Household in the poorest decile (dummy) | -0.00376 | 0.00149 | -2.530 | 0.011 | $-0.00348$ | 0.00133 | -2.630 | 0.009 |
| Household in Metro Manila District 2 (dummy) | 0.00058 | 0.00176 | 0.330 | 0.742 | 0.00032 | 0.00176 | 0.180 | 0.858 |
| Household in Metro Manila District 3 (dummy) | 0.00153 | 0.00181 | 0.840 | 0.399 | 0.00146 | 0.00180 | 0.810 | 0.419 |
| Household in Metro Manila District 4 (dummy) | 0.00501 | 0.00184 | 2.720 | 0.006 | 0.00448 | 0.00184 | 2.440 | 0.015 |
| _Intercept | -0.00916 | 0.03228 | -0.280 | 0.777 | -0.02508 | 0.02779 | -0.900 | 0.367 |

Table 23. Augmented Working-Leser Repairs and Maintenance Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | p Value | Coefficient | Standard Error | z Value | $p$ Value |
| Log of income/expenditure | 0.00110 | 0.00156 | 0.700 | 0.482 | 0.00026 | 0.00141 | 0.180 | 0.856 |
| Members of household younger than 1 year | -0.00098 | 0.00119 | -0.820 | 0.410 | -0.00096 | 0.00124 | -0.780 | 0.438 |
| Members of household who are 1 to 6 years old | 0.00018 | 0.00041 | 0.430 | 0.666 | 0.00013 | 0.00042 | 0.300 | 0.768 |
| Members of household who are 7 to 14 years old | 0.00033 | 0.00032 | 1.030 | 0.302 | 0.00039 | 0.00033 | 1.170 | 0.242 |
| Members of household who are 15 to 24 years old | 0.00001 | 0.00042 | 0.030 | 0.979 | 0.00000 | 0.00044 | 0.000 | 0.999 |
| Members of household who are 25 to 59 years old | -0.00074 | 0.00055 | -1.350 | 0.178 | -0.00071 | 0.00056 | -1.260 | 0.209 |
| Members of household who are 60 years and older | 0.00105 | 0.00076 | 1.370 | 0.170 | 0.00109 | 0.00079 | 1.380 | 0.167 |
| Number of nonrelative members of household | -0.00029 | 0.00118 | -0.240 | 0.808 | -0.00032 | 0.00123 | -0.260 | 0.796 |
| Male household head (dummy) | 0.00042 | 0.00090 | 0.460 | 0.643 | 0.00014 | 0.00094 | 0.150 | 0.881 |
| Household head is jobless (dummy) | -0.00123 | 0.00082 | -1.500 | 0.133 | -0.00138 | 0.00085 | -1.630 | 0.103 |
| Household head is 45 years old and older (dummy) | -0.00025 | 0.00079 | -0.310 | 0.754 | -0.00039 | 0.00082 | -0.470 | 0.638 |
| Single household head (dummy) | -0.00073 | 0.00154 | -0.480 | 0.633 | -0.00108 | 0.00160 | -0.680 | 0.498 |
| Married household head (dummy) | -0.00111 | 0.00135 | -0.830 | 0.409 | -0.00138 | 0.00141 | -0.990 | 0.324 |
| Widowed household head (dummy) | -0.00117 | 0.00144 | -0.810 | 0.415 | -0.00157 | 0.00149 | -1.050 | 0.293 |
| At most elementary graduate (dummy) | 0.00087 | 0.00076 | 1.140 | 0.255 | 0.00088 | 0.00080 | 1.100 | 0.272 |
| At most high school graduate (dummy) | 0.00031 | 0.00095 | 0.330 | 0.742 | 0.00042 | 0.00099 | 0.430 | 0.669 |
| With some college education (dummy) | -0.00020 | 0.00110 | -0.180 | 0.855 | -0.00043 | 0.00115 | -0.370 | 0.710 |
| At least college graduate (dummy) | -0.00063 | 0.00171 | -0.370 | 0.711 | -0.00053 | 0.00178 | -0.300 | 0.766 |
| Single type of household (dummy) | -0.00049 | 0.00113 | -0.440 | 0.662 | -0.00074 | 0.00117 | -0.630 | 0.530 |
| Household in the poorest decile (dummy) | -0.00040 | 0.00085 | -0.470 | 0.639 | -0.00096 | 0.00079 | -1.220 | 0.223 |
| Household in Metro Manila District 2 (dummy) | 0.00189 | 0.00100 | 1.880 | 0.060 | 0.00197 | 0.00104 | 1.890 | 0.059 |
| Household in Metro Manila District 3 (dummy) | 0.00078 | 0.00103 | 0.760 | 0.450 | 0.00077 | 0.00107 | 0.720 | 0.471 |
| Household in Metro Manila District 4 (dummy) | 0.00024 | 0.00105 | 0.230 | 0.821 | 0.00025 | 0.00109 | 0.230 | 0.822 |
| _Intercept | -0.01018 | 0.01836 | -0.550 | 0.579 | 0.00067 | 0.01652 | 0.040 | 0.967 |

Table 24. Augmented Working-Leser Clothing and Footwear Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | p Value | Coefficient | Standard Error | z Value | p Value |
| Log of income/expenditure | 0.00169 | 0.00263 | 0.640 | 0.520 | 0.00323 | 0.00226 | 1.430 | 0.153 |
| Members of household younger than 1 year | -0.00092 | 0.00201 | -0.460 | 0.648 | -0.00108 | 0.00199 | -0.540 | 0.587 |
| Members of household who are 1 to 6 years old | 0.00091 | 0.00069 | 1.330 | 0.183 | 0.00090 | 0.00068 | 1.330 | 0.183 |
| Members of household who are 7 to 14 years old | 0.00131 | 0.00053 | 2.450 | 0.014 | 0.00087 | 0.00053 | 1.650 | 0.100 |
| Members of household who are 15 to 24 years old | -0.00015 | 0.00071 | -0.220 | 0.828 | -0.00044 | 0.00070 | -0.620 | 0.534 |
| Members of household who are 25 to 59 years old | -0.00159 | 0.00092 | -1.730 | 0.083 | -0.00161 | 0.00090 | -1.780 | 0.074 |
| Members of household who are 60 years and older | -0.00239 | 0.00128 | -1.860 | 0.063 | -0.00218 | 0.00126 | -1.730 | 0.084 |
| Number of nonrelative members of household | 0.00762 | 0.00199 | 3.840 | 0.000 | 0.00724 | 0.00197 | 3.680 | 0.000 |
| Male household head (dummy) | 0.00198 | 0.00152 | 1.300 | 0.193 | 0.00212 | 0.00151 | 1.410 | 0.158 |
| Household head is jobless (dummy) | 0.00149 | 0.00137 | 1.080 | 0.279 | 0.00099 | 0.00136 | 0.730 | 0.466 |
| Household head is 45 years old and older (dummy) | 0.00102 | 0.00133 | 0.770 | 0.441 | 0.00160 | 0.00132 | 1.220 | 0.223 |
| Single household head (dummy) | -0.00375 | 0.00259 | -1.450 | 0.147 | -0.00387 | 0.00256 | -1.510 | 0.131 |
| Married household head (dummy) | -0.00030 | 0.00227 | -0.130 | 0.894 | -0.00192 | 0.00225 | -0.850 | 0.393 |
| Widowed household head (dummy) | -0.00134 | 0.00242 | -0.550 | 0.581 | -0.00246 | 0.00239 | -1.030 | 0.305 |
| At most elementary graduate (dummy) | -0.00228 | 0.00128 | -1.770 | 0.076 | -0.00115 | 0.00128 | -0.900 | 0.366 |
| At most high school graduate (dummy) | -0.00048 | 0.00160 | -0.300 | 0.763 | 0.00057 | 0.00159 | 0.360 | 0.721 |
| With some college education (dummy) | 0.00126 | 0.00185 | 0.680 | 0.497 | 0.00142 | 0.00183 | 0.780 | 0.438 |
| At least college graduate (dummy) | 0.00167 | 0.00288 | 0.580 | 0.563 | 0.00078 | 0.00285 | 0.270 | 0.785 |
| Single type of household (dummy) | -0.00267 | 0.00190 | -1.400 | 0.160 | -0.00283 | 0.00188 | -1.500 | 0.133 |
| Household in the poorest decile (dummy) | 0.00228 | 0.00143 | 1.600 | 0.109 | 0.00150 | 0.00126 | 1.190 | 0.236 |
| Household in Metro Manila District 2 (dummy) | -0.00178 | 0.00169 | -1.050 | 0.294 | -0.00303 | 0.00167 | -1.810 | 0.070 |
| Household in Metro Manila District 3 (dummy) | -0.00031 | 0.00174 | -0.180 | 0.856 | -0.00052 | 0.00172 | -0.300 | 0.763 |
| Household in Metro Manila District 4 (dummy) | 0.00128 | 0.00176 | 0.720 | 0.469 | -0.00032 | 0.00175 | -0.180 | 0.855 |
| _Intercept | 0.00269 | 0.03093 | 0.090 | 0.931 | -0.01253 | 0.02646 | -0.470 | 0.636 |

Table 25. Augmented Working-Leser House Rental Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | z Value | $p$ Value | Coefficient | Standard Error | z Value | $p$ Value |
| Log of income/expenditure | --0.03029 | 0.01479 | -2.050 | 0.041 | 0.00084 | 0.01240 | 0.070 | 0.946 |
| Members of household younger than 1 year | -0.01615 | 0.01129 | -1.430 | 0.153 | -0.01558 | 0.01087 | -1.430 | 0.152 |
| Members of household who are 1 to 6 years old | -0.01178 | 0.00387 | -3.050 | 0.002 | -0.01233 | 0.00372 | -3.310 | 0.001 |
| Members of household who are 7 to 14 years old | -0.00810 | 0.00301 | -2.700 | 0.007 | -0.01143 | 0.00291 | -3.930 | 0.000 |
| Members of household who are 15 to 24 years old | -0.01412 | 0.00400 | -3.530 | 0.000 | -0.01815 | 0.00386 | -4.700 | 0.000 |
| Members of household who are 25 to 59 years old | -0.02146 | 0.00517 | -4.150 | 0.000 | -0.02345 | 0.00494 | -4.750 | 0.000 |
| Members of household who are 60 years and older | 0.00214 | 0.00722 | 0.300 | 0.767 | 0.00436 | 0.00691 | 0.630 | 0.528 |
| Number of nonrelative members of household | -0.01120 | 0.0111 | -1.000 | 0.316 | -0.01894 | 0.01077 | -1.760 | 0.079 |
| Male household head (dummy) | 0.01241 | 0.00857 | 1.450 | 0.148 | 0.01026 | 0.00824 | 1.240 | 0.213 |
| Household head is jobless (dummy) | 0.04002 | 0.00773 | 5.170 | 0.000 | 0.03017 | 0.00745 | 4.050 | 0.000 |
| Household head is 45 years old and older (dummy) | 0.01453 | 0.00746 | 1.950 | 0.052 | 0.02151 | 0.00721 | 2.980 | 0.003 |
| Single household head (dummy) | -0.02578 | 0.01456 | -1.770 | 0.077 | -0.01003 | 0.01401 | -0.720 | 0.474 |
| Married household head (dummy) | -0.03385 | 0.01277 | -2.650 | 0.008 | -0.03817 | 0.01233 | -3.100 | 0.002 |
| Widowed household head (dummy) | -0.01484 | 0.01362 | -1.090 | 0.276 | -0.01463 | 0.01310 | -1.120 | 0.264 |
| At most elementary graduate (dummy) | -0.01830 | 0.00722 | -2.540 | 0.011 | -0.01296 | 0.00699 | -1.850 | 0.064 |
| At most high school graduate (dummy) | 0.01111 | 0.00898 | 1.240 | 0.216 | 0.01728 | 0.00868 | 1.990 | 0.047 |
| With some college education (dummy) | 0.00724 | 0.01043 | 0.690 | 0.488 | 0.00389 | 0.01005 | 0.390 | 0.699 |
| At least college graduate (dummy) | 0.00412 | 0.01620 | 0.250 | 0.799 | -0.01799 | 0.01562 | -1.150 | 0.249 |
| Single type of household (dummy) | 0.00119 | 0.01069 | 0.110 | 0.912 | -0.00145 | 0.01030 | -0.140 | 0.888 |
| Household in the poorest decile (dummy) | 0.00325 | 0.00802 | 0.410 | 0.685 | 0.00294 | 0.00691 | 0.430 | 0.670 |
| Household in Metro Manila District 2 (dummy) | -0.01342 | 0.00951 | -1.410 | 0.158 | -0.01918 | 0.00916 | -2.090 | 0.036 |
| Household in Metro Manila District 3 (dummy) | -0.02833 | 0.00977 | -2.900 | 0.004 | -0.02915 | 0.00940 | -3.100 | 0.002 |
| Household in Metro Manila District 4 (dummy) | -0.00855 | 0.00992 | -0.860 | 0.389 | -0.01771 | 0.00959 | -1.850 | 0.065 |
| _Intercept | 0.59854 | 0.17399 | 3.440 | 0.001 | 0.25423 | 0.14490 | 1.750 | 0.079 |

Table 26. Augmented Working-Leser Special Occasions Income/Expenditure Engel Curves Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.00574 | 0.00322 | 1.780 | 0.075 | 0.00550 | 0.00272 | 2.020 | 0.044 |
| Members of household younger than 1 year | -0.00067 | 0.00246 | -0.270 | 0.784 | -0.00085 | 0.00239 | -0.350 | 0.723 |
| Members of household who are 1 to 6 years old | 0.00055 | 0.00084 | 0.650 | 0.514 | 0.00061 | 0.00082 | 0.740 | 0.458 |
| Members of household who are 7 to 14 years old | -0.00182 | 0.00066 | -2.770 | 0.006 | -0.00214 | 0.00064 | -3.350 | 0.001 |
| Members of household who are 15 to 24 years old | -0.00045 | 0.00087 | -0.510 | 0.607 | -0.00071 | 0.00085 | -0.840 | 0.402 |
| Members of household who are 25 to 59 years old | 0.00130 | 0.00113 | 1.150 | 0.249 | 0.00131 | 0.00109 | 1.210 | 0.226 |
| Members of household who are 60 years and older | 0.00219 | 0.00157 | 1.390 | 0.164 | 0.00249 | 0.00152 | 1.640 | 0.101 |
| Number of nonrelative members of household | 0.00245 | 0.00244 | 1.010 | 0.314 | 0.00182 | 0.00237 | 0.770 | 0.441 |
| Male household head (dummy) | 0.00051 | 0.00187 | 0.270 | 0.786 | 0.00008 | 0.00181 | 0.050 | 0.963 |
| Household head is jobless (dummy) | -0.00339 | 0.00169 | -2.010 | 0.044 | -0.00376 | 0.00164 | -2.300 | 0.022 |
| Household head is 45 years old and older (dummy) | 0.00043 | 0.00163 | 0.260 | 0.794 | 0.00067 | 0.00158 | 0.420 | 0.674 |
| Single household head (dummy) | -0.00285 | 0.00317 | -0.900 | 0.369 | -0.00255 | 0.00308 | -0.830 | 0.407 |
| Married household head (dummy) | -0.00306 | 0.00279 | -1.100 | 0.272 | -0.00365 | 0.00271 | -1.350 | 0.178 |
| Widowed household head (dummy) | -0.00027 | 0.00297 | -0.090 | 0.928 | -0.00140 | 0.00288 | -0.490 | 0.627 |
| At most elementary graduate (dummy) | -0.00191 | 0.00157 | -1.210 | 0.225 | -0.00122 | 0.00153 | -0.790 | 0.428 |
| At most high school graduate (dummy) | 0.00398 | 0.00196 | 2.030 | 0.042 | 0.00466 | 0.00191 | 2.440 | 0.015 |
| With some college education (dummy) | 0.00251 | 0.00228 | 1.100 | 0.271 | 0.00234 | 0.00221 | 1.060 | 0.289 |
| At least college graduate (dummy) | 0.00173 | 0.00353 | 0.490 | 0.625 | 0.00052 | 0.00343 | 0.150 | 0.879 |
| Single type of household (dummy) | -0.00477 | 0.00233 | -2.040 | 0.041 | -0.00556 | 0.00226 | -2.460 | 0.014 |
| Household in the poorest decile (dummy) | 0.00142 | 0.00175 | 0.810 | 0.417 | 0.00050 | 0.00152 | 0.330 | 0.744 |
| Household in Metro Manila District 2 (dummy) | -0.00163 | 0.00207 | -0.790 | 0.432 | -0.00255 | 0.00201 | -1.270 | 0.206 |
| Household in Metro Manila District 3 (dummy) | 0.00217 | 0.00213 | 1.020 | 0.309 | 0.00168 | 0.00207 | 0.810 | 0.416 |
| Household in Metro Manila District 4 (dummy) | -0.00127 | 0.00216 | -0.590 | 0.558 | -0.00236 | 0.00211 | -1.120 | 0.262 |
| _ Intercept | -0.05158 | 0.03794 | -1.360 | 0.174 | -0.04563 | 0.03183 | -1.430 | 0.152 |

Table 27. Augmented Working-Leser Gifts and Contributions Income/Expenditure
Engel Curves Estimated via Seemingly Unrelated Regressions,
Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  | Expenditure Engel Curve |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard Error | $z$ Value | $p$ Value | Coefficient | Standard Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.02012 | 0.00831 | 2.420 | 0.015 | 0.00996 | 0.00708 | 1.410 | 0.160 |
| Members of household younger than 1 year | -0.01046 | 0.00634 | -1.650 | 0.099 | -0.01136 | 0.00621 | -1.830 | 0.067 |
| Members of household who are 1 to 6 years old | -0.00910 | 0.00217 | -4.190 | 0.000 | -0.00975 | 0.00213 | -4.590 | 0.000 |
| Members of household who are 7 to 14 years old | -0.00724 | 0.00169 | -4.290 | 0.000 | -0.00796 | 0.00166 | -4.790 | 0.000 |
| Members of household who are 15 to 24 years old | -0.00780 | 0.00225 | -3.470 | 0.001 | -0.00815 | 0.00220 | -3.700 | 0.000 |
| Members of household who are 25 to 59 years old | -0.01404 | 0.00290 | -4.830 | 0.000 | -0.01358 | 0.00282 | -4.810 | 0.000 |
| Members of household who are 60 years and older | -0.00890 | 0.00405 | -2.190 | 0.028 | -0.00997 | 0.00395 | $-2.530$ | 0.011 |
| Number of nonrelative members of household | 0.00012 | 0.00628 | 0.020 | 0.985 | -0.00042 | 0.00615 | -0.070 | 0.945 |
| Male household head (dummy) | 0.00274 | 0.00481 | 0.570 | 0.570 | 0.00238 | 0.00471 | 0.510 | 0.613 |
| Household head is jobless (dummy) | -0.00574 | 0.00435 | -1.320 | 0.186 | -0.00823 | 0.00425 | -1.940 | 0.053 |
| Household head is 45 years old and older (dummy) | -0.01129 | 0.00419 | -2.690 | 0.007 | -0.01220 | 0.00412 | -2.960 | 0.003 |
| Single household head (dummy) | 0.00628 | 0.00818 | 0.770 | 0.443 | 0.00992 | 0.00800 | 1.240 | 0.215 |
| Married household head (dummy) | 0.01445 | 0.00718 | 2.010 | 0.044 | 0.01522 | 0.00704 | 2.160 | 0.031 |
| Widowed household head (dummy) | 0.00957 | 0.00765 | 1.250 | 0.211 | 0.01155 | 0.00748 | 1.540 | 0.123 |
| At most elementary graduate (dummy) | 0.00373 | 0.00406 | 0.920 | 0.358 | 0.00295 | 0.00399 | 0.740 | 0.459 |
| At most high school graduate (dummy) | 0.00092 | 0.00504 | 0.180 | 0.856 | 0.00135 | 0.00496 | 0.270 | 0.785 |
| With some college education (dummy) | 0.00386 | 0.00586 | 0.660 | 0.510 | 0.00429 | 0.00574 | 0.750 | 0.454 |
| At least college graduate (dummy) | -0.00717 | 0.00910 | -0.790 | 0.431 | -0.00825 | 0.00892 | -0.930 | 0.355 |
| Single type of household (dummy) | -0.01331 | 0.00601 | -2.220 | 0.027 | -0.01547 | 0.00588 | -2.630 | 0.009 |
| Household in the poorest decile (dummy) | $-0.00192$ | 0.00450 | -0.430 | 0.670 | -0.00786 | 0.00395 | -1.990 | 0.047 |
| Household in Metro Manila District 2 (dummy) | -0.00133 | 0.00535 | -0.250 | 0.804 | -0.00187 | 0.00523 | -0.360 | 0.721 |
| Household in Metro Manila District 3 (dummy) | 0.00478 | 0.00549 | 0.870 | 0.384 | 0.00288 | 0.00537 | 0.540 | 0.592 |
| Household in Metro Manila District 4 (dummy) | -0.00528 | 0.00558 | -0.950 | 0.344 | -0.00635 | 0.00548 | -1.160 | 0.246 |
| _Intercept | -0.17617 | 0.09777 | -1.800 | 0.072 | -0.04999 | 0.08275 | -0.600 | 0.546 |

Table 28. Augmented Working-Leser Savings Engel Curve Estimated via Seemingly Unrelated Regressions, Metro Manila Poor Households, 2009

| Factors | Income Engel Curve |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Coefficient | Standard <br> Error | $z$ Value | $p$ Value |
| Log of income/expenditure | 0.14097 | 0.02711 | 5.200 | 0.000 |
| Members of household younger than 1 year | 0.00049 | 0.02069 | 0.020 | 0.981 |
| Members of household who are 1 to 6 years <br> old | 0.00053 | 0.00709 | 0.070 | 0.941 |
| Members of household who are 7 to 14 years <br> old | -0.01843 | 0.00551 | -3.340 | 0.001 |
| Members of household who are 15 to 24 <br> years old | -0.01729 | 0.00733 | -2.360 | 0.018 |
| Members of household who are 25 to 59 <br> years old | --0.00389 | 0.00947 | -0.410 | 0.681 |
| Members of household who are 60 years <br> and older | 0.01206 | 0.01323 | 0.910 | 0.362 |
| Number of nonrelative members of <br> household | -0.03947 | 0.02048 | -1.930 | 0.054 |
| Male household head (dummy) | 0.00247 | 0.01570 | 0.160 | 0.875 |
| Household head is jobless (dummy) | -0.03882 | 0.01417 | -2.740 | 0.006 |
| Household head is 45 years old and older <br> (dummy) | 0.03384 | 0.01368 | 2.470 | 0.013 |
| Single household head (dummy) | -0.05072 | 0.02669 | 1.900 | 0.057 |
| Married household head (dummy) | -0.04368 | 0.02341 | -1.870 | 0.062 |
| Widowed household head (dummy) | -0.01155 | 0.02496 | -0.460 | 0.644 |
| At most elementary graduate (dummy) | 0.04166 | 0.01323 | 3.150 | 0.002 |
| At most high school graduate (dummy) | 0.05188 | 0.01645 | 3.150 | 0.002 |
| With some college education (dummy) | -0.00794 | 0.01912 | -0.420 | 0.678 |
| At least college graduate (dummy) | -0.06149 | 0.02970 | -2.070 | 0.038 |
| Single type of household (dummy) | -0.02100 | 0.01960 | -1.070 | 0.284 |
| Household in the poorest decile (dummy) | -0.00536 | 0.01469 | -0.360 | 0.715 |
| Household in Metro Manila District 2 <br> (dummy) | -0.04724 | 0.01744 | -2.710 | 0.007 |
| Household in Metro Manila District 3 <br> (dummy) | 0.31892 | -4.850 | 0.000 |  |
| Household in Metro Manila District 4 <br> (dummy) | -0.620 | 0.534 |  |  |
|  | -3.460 | 0.001 |  |  |

Table 29. Correlation Matrix of Residuals Income Engel Curves and the Breusch-Pagan Test of Independence of Residuals

|  | ifood | ialbev | itbcco | ifuel | itrcom | ihoper | iprcre | ircrtn | imedic | idufur | indfur | ieduc | itaxes | irpair | icloth | ihouse | ioccsn | igftot | isavings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ifood | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ialbev | 0.0282 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| itbcco | -0.0271 | 0.2346 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ifuel | 0.0768 | $-0.0832$ | -0.0703 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| itrcom | 0.0331 | $-0.0538$ | -0.0396 | -0.0058 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ihoper | 0.0766 | 0.0009 | -0.0112 | 0.0713 | -0.0217 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| iprcre | 0.2155 | -0.0196 | -0.0194 | 0.1535 | 0.1723 | 0.1295 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |
| ircrtn | 0.0057 | 0.0716 | 0.0472 | $-0.0005$ | 0.0450 | 0.0152 | 0.0381 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |
| imedic | -0.0358 | -0.0134 | -0.0540 | -0.0363 | -0.0342 | -0.0472 | -0.0201 | -0.0085 | 1.0000 |  |  |  |  |  |  |  |  |  |  |
| idufur | -0.0430 | -0.0073 | -0.0440 | 0.0404 | 0.0108 | $-0.0123$ | 0.0028 | -0.0040 | 0.0761 | 1.0000 |  |  |  |  |  |  |  |  |  |
| indfur | 0.0370 | -0.0213 | -0.0550 | 0.0345 | 0.0006 | -0.0023 | 0.0877 | 0.0556 | $-0.0209$ | 0.0482 | 1.0000 |  |  |  |  |  |  |  |  |
| ieduc | 0.0143 | -0.0209 | -0.0213 | 0.0035 | 0.0512 | $-0.0416$ | -0.0135 | -0.0116 | $-0.0207$ | $-0.0100$ | -0.0045 | 1.0000 |  |  |  |  |  |  |  |
| itaxes | -0.0593 | -0.0366 | -0.0392 | -0.0198 | 0.0677 | -0.0015 | $-0.0150$ | 0.0360 | 0.0067 | $-0.0111$ | -0.0280 | -0.0286 | 1.0000 |  |  |  |  |  |  |
| irpair | -0.0479 | 0.0208 | 0.0045 | -0.0296 | $-0.0399$ | 0.0044 | $-0.0228$ | 0.0309 | 0.0969 | $-0.0054$ | 0.0346 | 0.0108 | 0.0273 | 1.0000 |  |  |  |  |  |
| icloth | 0.0698 | 0.0342 | 0.0198 | 0.0299 | 0.0977 | 0.0097 | 0.2492 | 0.0846 | $-0.0063$ | -0.0084 | 0.2531 | 0.0130 | 0.1148 | $-0.0012$ | 1.0000 |  |  |  |  |
| ihouse | -0.1434 | -0.0655 | -0.0371 | 0.1023 | $-0.1396$ | 0.0761 | -0.0816 | -0.0356 | $-0.0662$ | 0.0083 | -0.0916 | -0.0792 | $-0.0888$ | $-0.0274$ | -0.1394 | 1.0000 |  |  |  |
| ioccsn | -0.0280 | $-0.0039$ | 0.0046 | 0.0519 | 0.0390 | $-0.0123$ | 0.0874 | 0.0036 | 0.0241 | 0.0412 | 0.0828 | 0.0134 | $-0.0121$ | 0.0789 | 0.0969 | -0.0927 | 1.0000 |  |  |
| igftot | $-0.1613$ | -0.0057 | -0.0665 | -0.1037 | $-0.0295$ | -0.0837 | $-0.1205$ | -0.0276 | $-0.0755$ | $-0.0500$ | -0.0235 | $-0.0491$ | 0.0008 | $-0.0372$ | $-0.0152$ | -0.0912 | $-0.0571$ | 1.0000 |  |
| isavings | $-0.6028$ | -0.0773 | 0.0049 | $-0.3349$ | $-0.2507$ | $-0.1630$ | $-0.3140$ | -0.0722 | $-0.1500$ | $-0.2884$ | -0.0394 | -0.1002 | -0.0476 | $-0.0120$ | -0.1717 | -0.3158 | $-0.1018$ | -0.0384 | 1.0000 |

Table 30. Correlation Matrix of Residuals Expenditure Engel Curves and the Breusch-Pagan Test of Independence of Residuals

|  | sfood | salbev | stbcco | sfuel | strcom | shoper | sprcre | srcrtn | smedic | sdufur | sndfur | seduc | staxes | srpar | scloth | shouse | soccsn | sgftot |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sfood | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| salbev | -0.0342 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| stbcco | -0.0323 | 0.2158 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sfuel | -0.1981 | -0.1120 | -0.0786 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| strcom | -0.1593 | -0.0697 | -0.0219 | -0.1098 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| shoper | -0.0364 | -0.0026 | 0.0001 | 0.0314 | -0.0689 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |  |
| sprcre | 0.0073 | -0.0487 | -0.0124 | 0.0665 | 0.0755 | 0.0938 | 1.0000 |  |  |  |  |  |  |  |  |  |  |  |
| srcrtn | -0.0452 | 0.0779 | 0.0689 | -0.0409 | 0.0329 | 0.0031 | 0.0111 | 1.0000 |  |  |  |  |  |  |  |  |  |  |
| smedic | -0.1712 | -0.0309 | -0.0542 | $-0.0754$ | -0.0736 | -0.0701 | -0.0613 | -0.0331 | 1.0000 |  |  |  |  |  |  |  |  |  |
| sdufur | -0.1817 | -0.0219 | -0.0412 | -0.0305 | -0.0778 | -0.0464 | -0.0736 | -0.0144 | 0.0552 | 1.0000 |  |  |  |  |  |  |  |  |
| sndfur | -0.0055 | -0.0294 | -0.0619 | 0.0367 | -0.0078 | -0.0091 | 0.0759 | 0.0522 | -0.0261 | 0.0700 | 1.0000 |  |  |  |  |  |  |  |
| seduc | -0.0607 | -0.0273 | -0.0228 | -0.0329 | 0.0184 | -0.0557 | -0.0475 | -0.0130 | -0.0379 | -0.0285 | -0.0097 | 1.0000 |  |  |  |  |  |  |
| staxes | -0.1011 | -0.0328 | -0.0387 | $-0.0426$ | 0.0528 | -0.0125 | -0.0226 | 0.0192 | -0.0233 | -0.0313 | -0.0286 | -0.0290 | 1.0000 |  |  |  |  |  |
| srpar | -0.0569 | 0.0135 | 0.0021 | $-0.0243$ | -0.0525 | 0.0108 | -0.0171 | 0.0042 | 0.0937 | 0.0056 | 0.0363 | 0.0120 | 0.0091 | 1.0000 |  |  |  |  |
| scloth | -0.0742 | 0.0132 | 0.0225 | -0.0129 | 0.0649 | -0.0129 | 0.2086 | 0.0553 | -0.0267 | $-0.0185$ | 0.2466 | -0.0048 | 0.1010 | -0.0184 | 1.0000 |  |  |  |
| shouse | -0.4766 | -0.1067 | -0.0599 | -0.0164 | -0.2362 | -0.0011 | -0.2080 | -0.0736 | -0.0863 | -0.0539 | -0.1047 | -0.1219 | -0.1124 | -0.0429 | -0.2114 | 1.0000 |  |  |
| soccsn | -0.1108 | -0.0095 | 0.0082 | 0.0400 | 0.0174 | -0.0304 | 0.0600 | -0.0042 | 0.0145 | 0.0080 | 0.0909 | 0.0067 | -0.0203 | 0.0526 | 0.0908 | -0.1405 | 1.0000 |  |
| sgftot | -0.2319 | -0.0040 | -0.0669 | -0.1310 | -0.0150 | -0.0803 | -0.1299 | -0.0271 | -0.0784 | $-0.0745$ | -0.0192 | -0.0547 | 0.0052 | -0.0387 | -0.0208 | -0.1286 | -0.0629 | 1.0000 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 31A. Seemingly Unrelated Regression (Iterated) Expenditure Engel Curves

| Equation | Parameters | RMSE | $R^{2}$ | $\chi^{2}$ | $p$ Value |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Food | 854 | 23 | 0.0835 | 0.3439 | 447.6500 | 0.0000 |
| Alcoholic beverages | 854 | 23 | 0.0183 | 0.0627 | 57.1000 | 0.0001 |
| Tobacco | 854 | 23 | 0.0154 | 0.0790 | 73.2700 | 0.0000 |
| Fuel | 854 | 23 | 0.0354 | 0.0963 | 90.9700 | 0.0000 |
| Transport and <br> communication | 854 | 23 | 0.0379 | 0.1160 | 112.0600 | 0.0000 |
| Household operations | 854 | 23 | 0.0137 | 0.0455 | 40.6600 | 0.0129 |
| Personal care | 854 | 23 | 0.0181 | 0.1661 | 170.1200 | 0.0000 |
| Recreation | 854 | 23 | 0.0092 | 0.0391 | 34.7600 | 0.0550 |
| Medical care | 854 | 23 | 0.0334 | 0.1040 | 99.1500 | 0.0000 |
| Durable furnishings | 854 | 23 | 0.0303 | 0.0734 | 67.6700 | 0.0000 |
| Nondurable furnishings | 854 | 23 | 0.0025 | 0.0369 | 32.6900 | 0.0867 |
| Education | 854 | 23 | 0.0233 | 0.0509 | 45.8300 | 0.0031 |
| Taxes | 854 | 23 | 0.0153 | 0.1042 | 99.3400 | 0.0000 |
| Repairs and maintenance | 854 | 23 | 0.0091 | 0.0244 | 21.3600 | 0.5588 |
| Clothing and footwear | 854 | 23 | 0.0145 | 0.0468 | 41.9400 | 0.0092 |
| House rental | 854 | 23 | 0.0796 | 0.2975 | 361.5900 | 0.0000 |
| Special occasions | 854 | 23 | 0.0175 | 0.0610 | 55.5000 | 0.0002 |
| Gifts and contributions | 854 | 23 | 0.0455 | 0.1199 | 116.3900 | 0.0000 |

Table 31B. Seemingly Unrelated Regression (Iterated) Income Engel Curves

| Equation | Obs <br> Parameters |  | RMSE | $R^{2}$ | $\chi^{2}$ | $p$ Value |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Food | 854 | 23 | 0.1061 | 0.3563 | 472.7800 | 0.0000 |
| Alcoholic beverages | 854 | 23 | 0.0178 | 0.0606 | 55.0400 | 0.0002 |
| Tobacco | 854 | 23 | 0.0150 | 0.0715 | 65.7300 | 0.0000 |
| Fuel | 854 | 23 | 0.0367 | 0.1137 | 109.5700 | 0.0000 |
| Transportation and <br> communication | 854 | 23 | 0.0401 | 0.1182 | 114.5100 | 0.0000 |
| Household operations | 854 | 23 | 0.0143 | 0.0440 | 39.3400 | 0.0182 |

Table 31B continued...

| Personal care | 854 | 23 | 0.0191 | 0.1883 | 198.0900 | 0.0000 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Recreation | 854 | 23 | 0.0085 | 0.0414 | 36.9200 | 0.0332 |
| Medical care | 854 | 23 | 0.0360 | 0.0787 | 72.9800 | 0.0000 |
| Durable furnishings | 854 | 23 | 0.0469 | 0.0306 | 27.0000 | 0.2561 |
| Non durable furnishings | 854 | 23 | 0.0024 | 0.0373 | 33.0900 | 0.0795 |
| Education | 854 | 23 | 0.0235 | 0.0501 | 45.0000 | 0.0040 |
| Taxes | 854 | 23 | 0.0153 | 0.1015 | 96.5000 | 0.0000 |
| Repairs and maintenance | 854 | 23 | 0.0087 | 0.0225 | 19.6300 | 0.6641 |
| Clothing and footwear | 854 | 23 | 0.0147 | 0.0544 | 49.1400 | 0.0012 |
| House rental | 854 | 23 | 0.0827 | 0.2612 | 301.9500 | 0.0000 |
| Special occasions | 854 | 23 | 0.0180 | 0.0500 | 44.9500 | 0.0040 |
| Gifts \& contributions | 854 | 23 | 0.0465 | 0.1052 | 100.3600 | 0.0000 |
| Food | 854 | 23 | 0.1515 | 0.1467 | 146.8500 | 0.0000 |

Note. Base equation for both sets of Engel curves is other expenditures.

