International Evidence on Food Consumption Patterns

An Update Using 2005 International Comparison Program Data

Andrew Muhammad, James L. Seale, Jr., Birgit Meade, and Anita Regmi

Table 4
Income elasticities for aggregate consumption categories, 144 countries, 2005

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communications	Recreation	Education	Other
Low-income countries:									
Congo, Dem. Rep.	0.854	0.970	1.088	1.061	1.573[a]	1.381	3.876[a]	0.939	2.161[a]
Burundi	0.839	0.969	1.084	1.059	1.573[a]	1.306	1.868[a]	0.937	1.640[a]
Liberia	0.836	0.969	1.083	1.059	8.620	1.295	2.525[a]	0.936	1.415[a]
Zimbabwe	0.831	0.969	1.082	1.058	4.286	1.281	2.050[b]	0.936	4.696
Ethiopia	0.827	0.968	1.081	1.058	3.275	1.270	5.406[a]	0.935	3.464
Guinea-Bissau	0.827	0.968	1.081	1.058	3.219	1.269	1.485[a]	0.935	3.399
Niger	0.827	0.968	1.081	1.058	3.174	1.269	2.163	0.935	3.346
Mozambique	0.822	0.968	1.080	1.057	2.665	1.259	1.325[a]	0.934	2.764
Malawi	0.819	0.968	1.079	1.057	2.424	1.252	3.074[a]	0.934	2.496
Rwanda	0.818	0.968	1.079	1.057	2.355	1.250	13.053	0.934	2.419
Chad	0.814	0.968	1.078	1.056	2.182	1.244	11.097	0.933	2.231
Angola	0.814	0.968	1.078	1.056	2.160	1.243	9.380	0.933	2.208
Gambia, The	0.813	0.968	1.078	1.056	2.134	1.241	8.708	0.933	2.179
Central African Republic	0.813	0.968	1.078	1.056	2.120	1.241	8.614	0.933	2.164
Mali	0.813	0.968	1.078	1.056	2.118	1.241	7.524	0.933	2.162
Tanzania	0.812	0.968	1.078	1.056	2.092	1.239	5.837	0.933	2.133
Sierra Leone	0.810	0.968	1.077	1.056	2.031	1.236	5.624	0.933	2.069
Guinea	0.810	0.968	1.077	1.056	2.021	1.236	4.987	0.932	2.058
Burkina Faso	0.808	0.968	1.077	1.056	1.987	1.234	4.052	0.932	2.02
Zambia	0.806	0.968	1.077	1.055	1.917	1.230	4.012	0.932	1.946
Madagascar	0.805	0.968	1.076	1.055	1.913	1.230	3.961	0.932	1.942
Uganda	0.805	0.968	1.076	1.055	1.909	1.229	3.733	0.932	1.937
Togo	0.804	0.968	1.076	1.055	1.886	1.228	3.590	0.931	1.913
Congo, Rep.	0.803	0.968	1.076	1.055	1.870	1.227	3.189	0.931	1.897
Nepal	0.801	0.968	1.075	1.055	1.820	1.223	3.022	0.931	1.843
Ghana	0.799	0.968	1.075	1.055	1.795	1.221	2.813	0.931	1.817
Mauritania	0.797	0.968	1.075	1.055	1.761	1.219	2.787	0.931	1.781
Bangladesh	0.796	0.968	1.075	1.055	1.756	1.218	2.696	0.931	1.776

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A Report from the Economic Research Service

International Evidence on Food Consumption Patterns
An Update Using 2005 International Comparison Program Data

Andrew Muhammad, amuhammad@ers.usda.gov
James L. Seale, Jr.
Birgit Meade, bmeade@ers.usda.gov
Anita Regmi, aregmi@ers.usda.gov

Abstract

In a 2003 report, *International Evidence on Food Consumption Patterns*, ERS economists estimated income and price elasticities of demand for broad consumption categories and food categories across 114 countries using 1996 International Comparison Program (ICP) data. This report updates that analysis with an estimated two-stage demand system across 144 countries using 2005 ICP data. Advances in ICP data collection since 1996 led to better results and more accurate income and price elasticity estimates. Low-income countries spend a greater portion of their budget on necessities, such as food, while richer countries spend a greater proportion of their income on luxuries, such as recreation. Low-value staples, such as cereals, account for a larger share of the food budget in poorer countries, while high-value food items are a larger share of the food budget in richer countries. Overall, low-income countries are more responsive to changes in income and food prices and, therefore, make larger adjustments to their food consumption pattern when incomes and prices change. However, adjustments to price and income changes are not uniform across all food categories. Staple food consumption changes the least, while consumption of higher-value food items changes the most.

This report, originally released in March 2011, was revised in February 2013 to correct the ordering of country names in the appendix tables. Additional clarifications to the data and estimation methods used were added to pages 1, 11, and 18.

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Summary

In a 2003 report, *International Evidence on Food Consumption Patterns*, ERS and collaborating economists estimated income and price elasticities of demand for broad consumption categories—such as food, clothing, education, and other goods—and for food categories such as cereals, meats, and dairy across 114 countries using 1996 International Comparison Program (ICP) data. These elasticities measure the degree to which consumption changes when prices or incomes change. The estimates have been widely used in economic models such as the USDA's Baseline model, the Global Trade Analysis Project (GTAP) model, and the International Food Policy Research Institute's IMPACT model. This report updates that analysis with a similar two-stage demand system using 2005 ICP data.

What Is the Issue?

An understanding of food demand and food trends across countries, and the ability to predict potential shifts in demand for different food products, are invaluable tools. The most prominent measures of food consumption behavior are income and price elasticities. A number of studies have estimated income and price elasticities using 1996 ICP data and data from years prior. However, advances in ICP data collection since 1996 should lead to better results and more accurate income and price elasticity estimates. Furthermore, the most recent ICP data round (2005) includes a greater number of countries, like developing countries in Sub-Saharan Africa, as well as China and India.

What Did the Study Find?

• Low-income countries allocate a greater portion of additional income to food. As countries become more affluent, more is allocated to luxury categories like recreation. For instance, a dollar increase in income would cause food expenditures in the Democratic Republic of Congo to increase by 63 cents, but only by 6 cents in the United States. In contrast, recreation expenditures in the Democratic Republic of Congo would not increase at all, while in the United States recreation expenditures would increase by 13 cents.

• The share of total budget allocated to housing is lowest in low-income countries and fairly similar in middle- and high-income countries, while the budget share on house furnishings is fairly similar across all income groups. Spending on health clearly rises with income, from 4.5 percent of the average household budget in low-income countries to 8.9 percent in high-income countries.

• The income elasticity of demand for food varies greatly among countries and is highest among low-income countries, where it varies from 0.85 for the Democratic Republic of Congo to 0.71 for Armenia. It ranges between 0.71 and 0.57 for middle-income countries, and from 0.56 to 0.35 for high-income countries. The average income elasticity for low-income countries is 0.78, over 1.5 times the average for high-income countries.

- With affluence, the portion of additional food expenditures allocated to cereals and other staples decreases. For instance, a dollar increase in food expenditures results in cereal expenditures in the Democratic Republic of Congo increasing by 31 cents. By contrast, cereal expenditures in the United States would actually decrease by 2 cents, indicating the lower status afforded this food category by most consumers in rich countries.

- The own-price elasticities (holding marginal utility of income constant) for the food subcategories vary by affluence according to economic theory; low-income countries are more responsive to price changes compared with higher-income countries. For instance, the own-price elasticity value for breads and cereals ranges from -0.50 for the Democratic Republic of Congo to near zero for the United States.

- Overall, low-income countries are more responsive to changes in income and food prices and, therefore, make larger adjustments to their food consumption pattern when incomes and prices change.

- Unlike previous ICP data, restaurant and catering expenditures are included among food in the 2005 data. Consequently, our estimates of the income elasticity of demand for food in high-income countries are larger than the estimates in Seale et al. (2003, derived using 1996 ICP data). We find that the average income elasticity for high-income countries is 0.50, while Seale et al. found it to be 0.34.

How Was the Study Conducted?

We estimate a two-stage demand system using 2005 ICP data. We analyze demand across 144 countries. The first stage involves estimating an aggregate demand system using the Florida-Preference Independence model across nine broad consumption categories: food—which includes food prepared and consumed at home, food away from home, and beverages and tobacco—clothing and footwear, education, housing, house furnishings and operations, medical care, transportation and communications, recreation, and other expenditures. The second stage of the analysis involves a second demand system using the Florida-Slutsky model to estimate demand across eight food subcategories: bread and cereals, meat, fish, dairy products, fruits and vegetables, oils and fats, beverages and tobacco, and other food products. Estimates are used to derive income and price elasticities of demand for broad consumption categories and food categories by country.

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Introduction

An understanding of food demand and food trends across countries and the ability to predict potential shifts in demand for different food products is an invaluable tool for all individuals involved in the agricultural sector. In an earlier ERS report, *International Evidence on Food Consumption Patterns,* Seale, Regmi, and Bernstein (2003) fit a two-stage demand system to 1996 International Comparison Program (ICP) data across 114 countries. In that report, Seale and his colleagues estimated income and own-price elasticities of demand for broad consumption categories—such as food, clothing, education, and other goods—and for food categories such as cereals, meats, dairy, and other food groups.

This report updates that analysis with a similar two-stage demand system using 2005 ICP data. In this study, we analyze demand across 144 countries and present income and price elasticities that can be used as inputs in future work to forecast food demand, as well as the need for housing, clothing, transportation, medical care, and other broad consumption categories. Consumers make food purchase decisions based on a budget that must also cover expenses for other goods and services. The budget available for food is dependent on the amount of income spent on these other goods and services. Therefore, an indepth study of food demand requires an understanding of the complete demand patterns of consumers. In this study, we present such a complete demand analysis where household decisionmaking is examined in two stages. In the first stage, a consumer is assumed to make budgetary decisions across broad consumption categories (food, housing, clothing, education, and other goods). In the second stage, the total food budget is further allocated to different food items. In conducting such a complete analysis, we provide demand estimates and income and own-price elasticities for nine broad consumption categories and eight food subcategories. These estimates are provided for countries ranging from low-income and developing, such as Zimbabwe, to high-income developed countries like Canada and the United States.

Advances in ICP data collection since the 1996 round should lead to better results and more accurate income and price elasticity estimates. The International Comparison Project started as a joint venture between the United Nations and the University of Pennsylvania, with the overall purpose of providing comparable Gross Domestic Product (GDP) data for a large number of consumption items across countries (World Bank, 2008; Kravis et al., 1975). The latest ICP round (2005) covers 146 countries; corrects for the scaling problem common to past ICP data as reported by Seale et al. (2003); and employs a new methodology to ensure data accuracy and consistency across the selected countries (Diewert, 2010). The elasticity estimates derived by Seale, Regmi, and Bernstein (2003) using 1996 ICP data have been widely used as input in economic models such as the USDA's Baseline model, the Global Trade Analysis Project (GTAP) model (Reimer and Hertel (2003, 2004), the International Food Policy Research Institute's IMPACT model, and others (see, for example, studies by Winters (2005), von Braun (2007), Hertel and Winters (2006), and Valenzuela et al. (2007)). Additionally, Cox and Alm (2007) used the parameter estimates from Seale et al. (2003) to derive elasticities based on 2006 expenditure data. The updated results in this report should prove equally valuable.[1]

[1]The ICP data published by the World Bank are non-additive, i.e., the sub-category expenditures do not add up to the category totals. However, the data used in this report were extracted before the World Banks's final aggregation and do not suffer from this problem.

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International Comparison Program Data

Expenditure and price data for the two-stage cross-country demand model were again obtained from the International Comparison Project, initiated in 1975 by researchers at the University of Pennsylvania (Kravis et al., 1978) and maintained by the ICP Development Data Group of the World Bank. Over the years, data collected by the ICP have increased from 10 countries in Phase I (1970) to 146 countries in 2005 (table 1). The elasticities presented in this report are based on modeling work that began with Theil, Chung, and Seale (1989) using the data from the first four phases, covering a total of 60 countries. Seale, Regmi, and Bernstein (2003) provided updates for existing countries and additional coverage based on 1996 data that included 65 more countries. However, 10 countries included in the earlier 3 phases were excluded in the 1996 data, resulting in a total of 115 countries, 114 of which were covered by Seale et al. (2003).

The current analysis is based on the latest ICP data (2005), which cover 146 countries. These 146 economies account for more than 95 percent of the world's population and 98 percent of the world's nominal GDP (World Bank, 2008). Figure 1 shows a world map highlighting the countries that were covered in the 2005 ICP, and a list of all countries is provided in table 1. Most of the countries included for the first time in this round are low-income countries in Africa. The number of African countries included more than doubled from 22 in 1996 to 48 in 2005. Several new Asian coun-

Figure 1

Countries covered by the 2005 International Comparison Program (ICP)
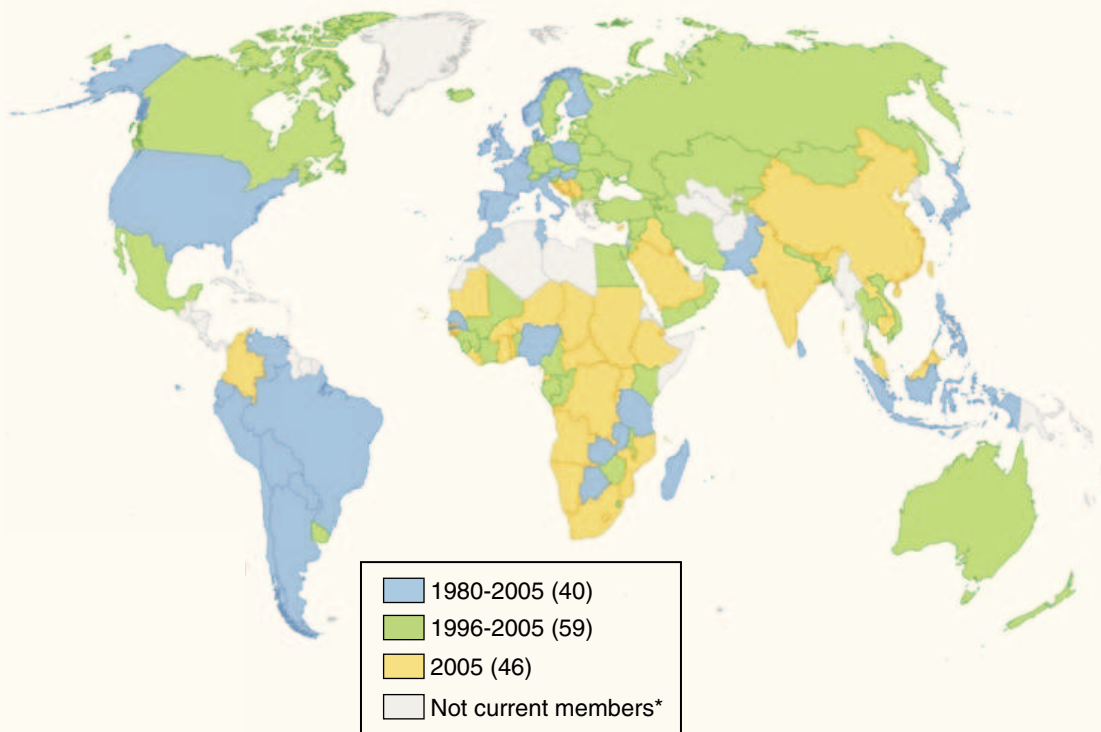
■ (blue)	1980-2005 (40)
■ (green)	1996-2005 (59)
■ (yellow)	2005 (46)
□ (gray)	Not current members*

*ICP countries from 1996 missing in 2005 are: Greece, Turkmenistan, Uzbekistan, and 12 countries from the Carribean.

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Table 1
Countries in the 2005 ICP Round

Latin America	Asia	Africa	West Asia	CIS	Europe/OECD
Argentina**	Bangladesh*	Angola	Bahrain*	Armenia*	Belgium**
Bolivia**	Bhutan	Burundi	Iraq	Azerbaijan*	Denmark**
Brazil**	Brunei Darussalam	Benin*	Jordan*	Belarus*	Germany*
Chile**	Cambodia	Burkina Faso	Kuwait	Georgia*	Spain**
Colombia	China	Botswana**	Lebanon*	Kazakhstan*	France**
Ecuador**	Fiji*	Central African Rep.	Oman*	Kyrgyz Rep.*	Ireland**
Peru**	Hong Kong**	Côte d'Ivoire*	Qatar*	Moldova*	Italy**
Paraguay**	India	Cameroon*	Saudi Arabia	Tajikistan*	Luxembourg**
Uruguay*	Indonesia**	Congo, Rep.*	Syria*	Ukraine*	Netherlands**
Venezuela**	Iran*	Comoros	Yemen*	Russia*	Austria**
	Lao PDR	Cape Verde			Portugal**
	Macao	Djibouti			Finland**
	Malaysia	Egypt*			Sweden*
	Maldives	Ethiopia			United Kingdom**
	Mongolia*	Gabon*			Cyprus
	Nepal*	Ghana			Czech Republic*
	Pakistan**	Gambia, The			Estonia*
	Philippines**	Guinea-Bissau			Hungary**
	Singapore*	Equatorial Guinea			Latvia*
	Sri Lanka**	Guinea*			Lithuania*
	Taiwan	Kenya*			Malta
	Thailand*	Liberia			Poland**
	Vietnam*	Lesotho			Slovakia*
		Morocco**			Slovenia*
		Madagascar**			Bulgaria*
		Mali*			Romania*
		Mozambique			Turkey*
		Mauritania			Iceland*
		Mauritius*			Norway**
		Malawi*			Switzerland*
		Namibia			Croatia
		Niger			Macedonia*
		Nigeria**			Albania*
		Rwanda			Bosnia & Herzegovina
		Sudan			Montenegro
		Senegal**			Serbia
		Sierra Leone*			Australia*
		São Tomé and Principe			New Zealand*
		Swaziland*			Japan**
		Chad			Korea**
		Togo			Canada*
		Tunisia**			Mexico*
		Tanzania**			United States**
		Uganda			Israel**
		South Africa			
		Congo, Dem. Rep.			
		Zambia**			
		Zimbabwe*			

* Denotes countries (59) present in the 1996 International Comparison Program (ICP) and not in the 1980 ICP. ** Denotes countries (40) present both in the 1996 and the 1980 ICP.

Countries from 1996 missing in 2005 are Greece, Turkmenistan, Uzbekistan, and 12 countries from the Carribean. Greece is not available at the basic heading but is included at the aggregate level by the World Bank.

OECD = Organisation for Economic Co-operation and Development.

Yellow: included for the first time in the 2005 ICP.

tries have been included, most notably China and India. In Latin America, Colombia has been added, while 12 Caribbean countries were excluded. The Commonwealth of Independent States no longer covers Turkmenistan and Uzbekistan. In West Asia, Iraq and Kuwait were added, while the countries added to the Eurostat/Organisation for Economic Co-operation and Development (OECD) group include Cyprus and Malta in addition to Croatia, Bosnia and Herzegovina, Montenegro, and Serbia.[2]

Problems in comparing expenditures across countries occur due to differences in currency. Using exchange rates to convert expenditures to a single currency may not always be desirable since exchange rates fail to account for the fact that services are cheaper in developing countries. The 2005 ICP uses a new methodology to compare relative price levels and GDP levels across the 146 countries included in this round.[3] This time, the world was divided into 6 regions: 5 geographic regions—Africa (48 countries included), Asia Pacific (23 countries), West Asia (11 countries), South America (10 countries), and the Commonwealth of Independent States (CIS) (10 countries)—and the OECD and other European countries, plus Israel and Russia (46 countries). In earlier rounds, one product list was used for all countries covered, and prices for these products needed to be collected. However, consumption varies sufficiently across regions, making such a common product list impractical. For the 2005 round, each of the regions was able to develop its own product lists and determine its purchasing power parity (PPP) and volume shares independently. Later, the regional results were linked into a global world comparison model, which left the regional relative parities intact. The linking was accomplished by a methodology using 19 ring countries, thus providing representatives from each region.[4]

To facilitate the analysis, the 144 countries covered by the 2005 ICP are divided into low-, middle-, and high-income countries, based on their income relative to that of the United States.[5] Low-income countries represent those with real per capita income less than 15 percent of the U.S. level, middle-income countries are those with income between 15 and 45 percent of the U.S. level, and high-income countries have per capita income equal to or greater than 45 percent of the U.S. level. This criterion for grouping indicates that the majority of Sub-Saharan African countries, poor transition economies such as Mongolia and Turkmenistan, and low-income Middle Eastern and Asian countries such as Yemen and Nepal fall within the first group. High-income countries include most Western European countries, Australia, New Zealand, Canada, and the United States; while the middle-income countries include better-off transition economies such as Estonia, Hungary, Slovenia, North African countries, and many Latin American countries.

Budget Shares and Volume of Consumption[6]

The average budget shares for the aggregate consumption categories and each of the three country groups are presented in table 2. In the past, the food grouping included food prepared and consumed at home, plus beverages and tobacco. In the 2005 ICP round, food for the first time includes food consumed away from home, captured under the "other food" category. As expected, the budget shares for food tend to decrease as incomes rise, ranging from over 73 percent of the total budget in Tanzania to about 14 percent in the United States. These shares are very close to those of the 1996 round, an

[2]India and Colombia were in ICP Phases I, II, III, and IV. They were not included in the 1996 ICP data.

[3]Regional total sums to 148 countries, but Egypt appears in both the African and West Asia regions and Russia appears in both the OECD and CIS regions. This discussion draws heavily on Diewert (2010), who provides detailed methodological information on the 2005 ICP.

[4]Ring countries serve as a small sample of countries stratified by regions that are both representative of their region and have available a wide range of goods and services found in countries outside of their region.

[5]This classification facilitates analysis in this publication and is not based on any generally accepted criteria for classification. Since the classification is based on the ICP data used in this analysis, some countries may be in a group with which they normally would not be associated. Although the 2005 ICP covers 146 countries, Greece is not available at the basic heading level and Comoros was excluded from the analysis.

[6]For detailed data on volume of consumption, nominal expenditures, and budget shares for each country, see World Bank (2008).

indication that income levels and corresponding budget shares do not tend to change dramatically over relatively short periods of time. Although the range of budget shares for clothing and footwear is not as large as for food, the average budget shares are also higher for low-income countries compared with the other two groups. Interestingly, even the budget share for education is slightly lower for high-income countries than for middle-income and low-income countries, a result that differs from the 1996 ICP data. However, comparisons between the two rounds have to be treated with caution given the differences in how the data were collected. The proportion of the total budget spent on housing is lowest in low-income countries and fairly similar in middle- and high-income countries, while the budget share on house furnishings is fairly similar across all income groups. Health spending budget shares clearly rise with income (from 4.5 percent in low-income countries to 8.9 percent in high-income countries). This is also true for spending on recreation, a luxury good for which budget shares vary between 3.1 and 9.5 percent. Transportation and communications budget shares are highest in middle-income countries at 15.5 percent, followed by high-income countries at 14.9 percent.

The conditional budget shares for the eight food subcategories are also presented in table 2. Cereals, fats and oils, and fruits and vegetables account for almost three times as much of the total food budget in low-income countries as in high-income countries.[7] The fruits and vegetable category includes roots and tubers, a cheap source of calories in many poor countries. Therefore, a large portion of the food budget in Sub-Saharan countries—for example, 50 percent in Rwanda and 46 percent in Côte d'Ivoire, where more than one-third of daily per capita calorie consumption is derived from roots and tubers—is spent on fruits and vegetables. On the other hand, the budget shares for meat and dairy are highest in middle-income countries, and the budget share for beverages/tobacco is highest in high-income countries. Similarly , the budget share for the other food category—which includes away-from-home food purchases—is highest in high-income countries (37 percent), over 2.5 times the budget share in low-income countries.

[7]Including roots and tubers in the vegetable category is somewhat misleading as roots and tubers constitute the major staple crop in some low-income African countries, similar to basic grains in other countries. In most other countries, the fruits and vegetables group consists of higher-value food products.

Table 2
Budget shares for broad aggregates and conditional budget shares for food categories

	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communications	Recreation	Education	Other
Low-income	0.485	0.061	0.135	0.052	0.045	0.102	0.031	0.034	0.054
Middle-income	0.311	0.055	0.183	0.056	0.059	0.155	0.061	0.033	0.087
High-income	0.204	0.051	0.187	0.060	0.089	0.149	0.095	0.031	0.134

	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Low-income	0.233	0.134	0.063	0.078	0.049	0.181	0.146	0.116
Middle-income	0.124	0.172	0.035	0.099	0.030	0.145	0.208	0.187
High-income	0.086	0.118	0.041	0.066	0.014	0.098	0.369	0.208

Source: 2005 International Comparison Program (ICP) data, World Bank.

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Two-Stage Cross-Country Demand Model

Our analysis of international food consumption patterns is conducted in two steps. The first step involves estimating an aggregate demand system using the Florida-Preference Independence (PI) model across nine broad consumption categories: food—which includes food prepared and consumed at home, food away from home, and beverages and tobacco—clothing and footwear, education, housing, house furnishings and operations, medical care, transport and communications, recreation, and other expenditures. The second step of the analysis involves a second demand system using the Florida-Slutsky model across eight food subcategories: bread and cereals, meat, fish, dairy products, fruits and vegetables, oils and fats, beverages and tobacco, and other food products. Both the Florida-PI model and the Florida-Slutsky model are discussed in more detail later in this section.

Stepwise demand analysis, which assumes that consumers spend their income in stages, requires assumptions about the separability of consumer preferences. Consumer preferences are independent or strongly separable if the preference ordering among goods is not dependent on the quantities consumed of any other goods. This concept can be applied to broad product groups or categories and is referred to as block independence. Block independence or strong group separability implies that the preference ordering among items within one broad consumption group is not dependent on the quantities of items consumed in other groups. This assumption enables stepwise demand analysis, where in the first stage consumers allocate their incomes across broad categories of goods, like food, shelter, and entertainment. In the second stage, consumers spend the amount budgeted to a particular product group on goods within the group.

While it is reasonable to assume that expenditures among broad consumption categories in the first stage of the budgeting process might be independent, demand for goods within the food product group may not be independent. For example, many food products are substitutes or complements and have cross-price effects. Therefore, when estimating the second stage of the model, preference independence is generally replaced by weak separability, which suggests that food categories are groupwise-dependent. In our analysis of the food categories, the Florida-Slutsky model assuming weak separability is used instead of the Florida-PI model.

Florida-Preference Independence (PI) Model

The Florida-PI model—also known as the Working-Preference Independence model—is an extension of the model developed by Working (1943). In its general form, Working's model expresses budget shares as a linear function of real aggregate expenditures and is specified as follows:

$$w_i = \frac{E_i}{E} = \alpha_i + \beta_i \log E + \varepsilon_i. \tag{1}$$

$w_i = \frac{E_i}{E}$ is the budget share for good i, E_i represents the expenditure on good i, and $E = \sum_{i=1}^{n} E_i$ is real aggregate expenditures. ε_i is a residual term and α_i and β_i are parameters to be estimated. Since the budget shares across

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all consumption categories sum to 1, α and β are subject to the following adding-up conditions:

$$\sum_{i=1}^{n} \alpha_i = 1; \ \sum_{i=1}^{n} \beta_i = 0 . \tag{2}$$

From equation 1 we can derive the marginal share (θ_i), which is a measure of how an additional unit of expenditure is allocated to the ith good:

$$\theta_i = \frac{dE_i}{dE} = \alpha_i + \beta_i(1 + \log E) = w_i + \beta_i . \tag{3}$$

Note that the marginal share is not constant but varies with affluence, and it exceeds the budget share (w_i) by β_i. Accordingly, when income changes, w_i changes as does the marginal share.

Using the differential approach to consumer demand, Theil, Chung, and Seale (1989) incorporated prices into Working's model to derive the Florida-PI model. The resulting specification can be divided into linear, quadratic, and cubic components, as indicated below:

$$w_{ic} = \text{LINEAR} + \text{QUADRATIC} + \text{CUBIC} + \varepsilon_{ic} . \tag{4a}$$

LINEAR = Real-income term

$$= \alpha_i + \beta_i q_c . \tag{4b}$$

QUADRATIC = Pure-price term

$$= \left(\alpha_i + \beta_i q_c\right)\left[\log \frac{p_{ic}}{\overline{p}_i} - \sum_{j=1}^{n} \left(\alpha_j + \beta_j q_c\right) \log \frac{p_{jc}}{\overline{p}_j} \right]. \tag{4c}$$

CUBIC = Substitution term

$$= \phi\left(\alpha_i + \beta_i q_c^*\right)\left[\log \frac{p_{ic}}{\overline{p}_i} - \sum_{j=1}^{n} \left(\alpha_j + \beta_j q_c^*\right) \log \frac{p_{jc}}{\overline{p}_j} \right]. \tag{4d}$$

The c subscript denotes the country. q_c is the natural logarithm of Q_c, which is a measure of real per capita income, and $q_c^* = (1 + q_c)$.
$\log \overline{p}_i = \frac{1}{N} \sum_{c=1}^{N} \log p_{ic}$, which is the geometric mean of the price of i (p_i) over all countries, and ϕ is the income flexibility coefficient—the inverse of the income elasticity of the marginal utility of income—which is assumed constant in the model.

The linear term in the model represents the effect of a change in real income—that is, the volume of total expenditures—on the budget share. Since the quadratic and cubic terms vanish at geometric mean prices, the linear term is also the budget share at geometric mean prices. The quadratic term—quadratic because it contains products of α and β—is the pure-price term, showing how an increase in price results in a higher budget share on good i, even if the volume of expenditures goes down or stays the same. The cubic term—cubic because it involves ϕ—is a substitution term reflecting how higher prices cause a lower budget share for good i due to the substitution of good i for other goods.

The expenditure elasticity for the Florida-PI model is calculated by the ratio of the marginal share to the budget share as follows (see Theil et al., 1989, pp. 110-111 for derivation):

$$\eta_{ic} = \frac{d \log E_{ic}}{d \log E_c} = \frac{\theta_{ic}}{\overline{w}_{ic}} = 1 + \frac{\beta_i}{\overline{w}_{ic}} \; , \tag{5}$$

where, in this case, $\overline{w}_{ic}$ represents the budget share of good i at geometric mean prices, c represents the country, θ_{ic} is the marginal share of good i in country c, and β_i is the estimated coefficient on q_c in the ith good equation.[8]

Three types of own-price elasticities of demand can be calculated from the parameter estimates in the Florida-PI model. The first of these, the Frisch-deflated own-price elasticity of good i, is the own-price elasticity when price changes and income is compensated to keep the marginal utility of income constant. It is given by:

$$F = \phi \frac{\overline{w}_{ic} + \beta_i}{\overline{w}_{ic}} \; . \tag{6}$$

The Slutsky (compensated) own-price elasticity measures the change in demand for good i when the price of i changes, while real income remains unchanged. It is calculated as follows:

$$S = \phi \frac{\left(\overline{w}_{ic} + \beta_i\right)\left(1 - \overline{w}_{ic} - \beta_i\right)}{\overline{w}_{ic}} = F\left(1 - \overline{w}_{ic} - \beta_i\right) \; . \tag{7}$$

The Cournot (uncompensated) own-price elasticity refers to the situation when own-price changes while nominal income remains constant but real income changes, and is given by:

$$C = \phi \frac{\left(\overline{w}_{ic} + \beta_i\right)\left(1 - \overline{w}_{ic} - \beta_i\right)}{\overline{w}_{ic}} - \left(\overline{w}_{ic} + \beta_i\right) = S - \left(\overline{w}_{ic} + \beta_i\right) . \tag{8}$$

How each elasticity measure is applied depends on the needs of the researcher. For instance, the Slutsky elasticity is more suitable if the concern is the substitution effect of a change in price, while the Cournot elasticity encompasses both the substitution and real income effect. Consequently, the Slutsky elasticity will be smaller than the Cournot elasticity (in absolute value) for a normal good because the real income effect reinforces the substitution effect. However, the difference between these two measures declines with affluence since the real income effect decreases with rising income. The (absolute) value of the Frisch elasticity is between the Slutsky and Cournot elasticity. The three elasticities can be significantly different for low-income countries, but are relatively close for high-income countries.

Florida-Slutsky Model

The Florida-Slutsky model is used to estimate the second stage of the model, the food subcategories. Like the Florida-PI model, the Florida-Slutsky model has three components: a linear real-income term, a quadratic pure-price term, and a linear substitution term replacing the cubic term in the former model, that is:

$$
w_{ic} = (\alpha_i + \beta_i q_c)
$$

$$
+ (\alpha_i + \beta_i q_c) \left[\log \frac{p_{ic}}{\overline{p}_i} - \sum_{j=1}^{n} (\alpha_j + \beta_j q_c) \log \frac{p_{jc}}{\overline{p}_j} \right] \qquad (9)
$$

$$
+ \sum_{j=1}^{n} \pi_{ij} \left[\log \frac{p_{jc}}{\overline{p}_j} \right].
$$

The π_{ij}'s represent the Slutsky price coefficients, a matrix of compensated price responses. The compensated (Slutsky) price elasticities may be estimated by the ratio $\pi_{ij} / \overline{w}_{ic}$, while the uncompensated (Cournot) own-price elasticity is given by the difference between the compensated elasticity and the income effect, that is $\pi_{ij} / \overline{w}_{ic} - (\overline{w}_{ic} + \beta_i)$. Similar to the Florida-PI model, the expenditure elasticity for the Florida-Slutsky model can be calculated at geometric mean prices using the formula given by equation 5.

Conditional Florida-Slutsky Model

The Florida Slutsky model can be written in terms of a conditional demand system—that is, the demand for good i contained in group S_g conditional on group expenditures. The conditional Florida-Slutsky model is:

$$
\overline{w}_{ic}^* = \alpha_i^* + \beta_i^* q_{gc}
$$

$$
+ (\alpha_i^* + \beta_i^* q_{gc}) \left[\log \frac{p_{i \in S_g, c}}{\overline{p}_{i \in S_g}} - \sum_{j \in S_g} (\alpha_j^* + \beta_j^* q_{gc}) \log \frac{p_{jc}}{\overline{p}_j} \right] \qquad (10)
$$

$$
+ \sum_{j \in S_g} \pi_{ij}^* \log \frac{p_{jc}}{\overline{p}_j} ,
$$

where $w_{ic}^* = w_{ic} / W_{gc}$, the conditional budget share of good $i \in S_g$, w_{ic} is the unconditional budget share of good $i \in S_g$, W_{gc} is the budget share of group S_g in country c, $\overline{p}_i$ is the geometric mean price of good $i \in S_g$, q_{gc} is the log of real expenditures on group S_g, and α_i^*, β_i^* and π_{ij}^* are conditional parameters to be estimated where π_{ij}^* is the conditional Slutsky (compensated) price parameter.

Expenditure and price elasticities estimated from the conditional Florida-Slutsky model are conditional on total food expenditures. The unconditional demand elasticities can be obtained using the parameters estimated in the first step of the analysis. For example, the unconditional expenditure elasticity (η_{ic}^U) is simply the conditional expenditure elasticity ($\eta_{ic}^* = 1 + \beta_i^* / \overline{w}_{ic}^*$) multiplied by the income elasticity of demand for food as a group (η_{Fc}) obtained from the Florida-PI model (equation 5):[9]

$$
\eta_{ic}^U = \eta_{Fc} \eta_{ic}^* \ \forall i \in S_g. \qquad (11)
$$

[9]The subscript Fc is used instead of ic since we are referring to the food group.

9

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The unconditional Frisch own-price elasticity is given by:

$$F_i^u = \frac{\phi \Theta_{gc}}{\overline{W}_{gc}} \frac{\theta_{ic}^*}{\overline{w}_{ic}^*} = \phi \eta_{gc} \eta_{ic}^* \qquad (12)$$

where Θ_{gc} is the marginal share for group S_g in country c, $\theta_{ic}^* = \theta_{ic} / \Theta_{gc}$ is the conditional marginal share of good $i \in S_g$, θ_{ic} is the unconditional marginal share of good i, and ϕ is the income flexibility parameter estimated in stage one using the Florida-PI model.[10]

The unconditional Slutsky price elasticity is given by:

$$\varepsilon_{ijc} = \varepsilon_{ijc}^* + \Phi_{gc} \eta_{ic}^* \eta_{jc}^* w_{ic}^* \left(1 - \overline{W}_{gc} \eta_{gc}\right), \qquad (13)$$

where $\varepsilon_{ijc}^* = \pi_{ij}^* / \overline{w}_{ic}^*$ is the conditional Slutsky price elasticity for good i in country c with respect to changes in the price of good j. $\Phi_{gc} = \phi \Theta_{gc} / \overline{W}_{gc}$; η_{ic}^* and η_{jc}^* are the conditional expenditure elasticities for i and j, respectively, in country c; and η_{gc} is the unconditional expenditure elasticity for the group (food, in our case) in country c.

The unconditional Cournot price elasticity can be estimated using the unconditional Slutsky elasticity, as given by equation 13:

$$C_{ijc} = \varepsilon_{ijc} - \eta_{ic}^* w_{jc}^* \eta_{gc} \overline{W}_{gc} . \qquad (14)$$

Estimation Procedure and Results

The parameters in the Florida-PI and the Florida-Slutsky model were esti-
mated by maximum likelihood (ML) using the scoring method (Harvey,
1990, pp. 133-135) and the GAUSS software. Similar to Seale et al. (2003),
groups of countries had variances of differing magnitudes resulting in hetero-
skedasticity that was country/group-specific. Consequently, the ML esti-
mator used in this analysis explicitly takes heteroskedasticity into account.
According to Theil et al. (1989), the covariance matrix for the group of
countries in the original ICP data rounds differs from that of the newly added
countries in latter data phases. Following Seale et al. (2003, p. 23), three
country groups are considered: group 1 is all countries included in the first
three phases of ICP data collection, group 2 includes the countries added in
phase 4, and group 3 includes all newly added countries since the 1996 data
round. For more details on the ML procedure when the covariance matrix is
heteroskedastic by country groups, see Seale et al. (2003, pp. 20-23).

Seale and Regmi (2006) note that poor quality data for some countries,
particularly low-income countries and newly added countries, are a
continuing problem with ICP data. While the possibility of data outliers
could be ignored, this could lead to model estimates being unreliable.

To identify the outliers, we follow Theil et al. (1989) and calculate the informa-
tion inaccuracy measure from statistical information theory. The model estimates
reported here account for the identified outlier countries. The details of this pro-
cedure are in Seale et al. (2003, pp. 50-51). This procedure resulted in 19 outlier
countries. The models were reestimated with the remaining 125 countries and the
resulting parameters were used in estimating elasticities for all 144 countries.[11]

[11]Outlier countries include Angola,
Armenia, Burundi, Chad, Democratic
Republic of Congo, Ethiopia, Gam-
bia, Guinea, Guinea-Bissau, Kuwait,
Liberia, Malawi, Mozambique, Niger,
Rwanda, Sierra Leone, Syria, Zambia
and Zimbabwe.

Aggregate Model Estimates

Table 3 presents the estimated parameters for the first stage (aggregate
categories) from equations 4a-4d. The ML estimation procedure resulted in
two measures of heteroskedasticity (K2 and K3). Since the heteroskedasticity
measure for country group 1 is normalized to equal one, K2 and K3 measure
the heteroskedasticity of groups 2 and 3 relative to group 1. The estimates
for the K's both exceed 1, confirming the presence of heteroskedasticity. The
negative beta (β) estimates for food, beverages, and tobacco; clothing and
footwear; and education indicate that these consumption categories are neces-
sities. All other consumption categories are luxuries. The following catego-
ries have near-zero β estimates: clothing and footwear; housing and utilities;
furnishing, household equipment, and maintenance; and education. Thus,
the income elasticity for these categories is close to unity. The β estimate for
food, beverages, and tobacco is by far the largest in absolute value at -0.108.
Our estimate is smaller than that obtained by Theil et al. (-0.134) (1989, table
5-4, p. 105), and by Seale et al. (0.135) (2003, table 5, p. 24). Both studies
used ICP data from previous years. The smaller value in this analysis could
be due to an increase in global affluence, resulting in a smaller share of
additional income being allocated to food, or due to the relative affluence of
newly added countries—such as China, India, and Taiwan—to the 2005 ICP
data series. As with previous estimates, our estimate retains the property of
the strong version of Engel's law: when income doubles, the budget share of
food declines by approximately 10 percent (Theil et al., 1989, p. 44).

Table 3
Maximum likelihood estimates of the aggregate model, 2005[1]

	Parameter	Standard error
Income flexibility ϕ	-0.732	0.034*
Beta β		
Food, beverage, and tobacco	-0.108	0.005*
Clothing and footwear	-0.002	0.002*
Housing and utilities	0.011	0.004*
Furnishing, household equipment, and maintenance	0.003	0.001*
Medical and health	0.020	0.002*
Transportation and communication	0.022	0.003*
Recreation and culture	0.026	0.002*
Education	-0.002	0.002*
Other	0.030	0.002*
Alpha α		
Food, beverage, and tobacco	0.165	0.010*
Clothing and footwear	0.052	0.004*
Housing and utilities	0.183	0.007*
Furnishing, household equipment, and maintenance	0.060	0.003*
Medical and health	0.096	0.005*
Transportation and communication	0.173	0.006*
Recreation and culture	0.103	0.003*
Education	0.027	0.004*
Other	0.141	0.005*
Heteroskedasticity measures		
K2	0.989	0.111*
K3	1.474	0.081*

[1]Comoros is excluded from the analysis. Egypt and Russia were reported twice and were averaged for estimation. Three country groups are considered for heteroskedasticity.
* denotes that the estimate is significant at the 0.01 level. Alpha and beta estimates are based on equations 4a-4d.
Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

Marginal Shares for Consumption Aggregates

Marginal shares measure how an additional dollar of income in a particular country is allocated across the nine broad consumption categories. The marginal share estimates for the 144 countries are plotted in figure 2, which illustrates how the marginal share for a consumption category varies by country based on the level of affluence. These estimates are derived using equation 3 and the beta estimate from equations 4a-4d, and reported for each country in appendix table 7. Low-income countries allocate a greater portion of an additional unit of income to food. As countries become more affluent, the portion of additional income allocated to food decreases and a greater portion is allocated to other expenditures such as recreation and health. For instance, a dollar increase in income would cause food expenditures in the Democratic Republic of Congo to increase by 63 cents, but only by 6 cents in the United States. In contrast, expenditures on health would increase by less than 1 cent in the Democratic Republic of Congo, while recreation expenditures would not increase at all. In the United States, health expenditures would increase by 12 cents and recreation expenditures by 13 cents with an additional dollar of income.

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Income and Price Elasticities

The most prominent measures of income and price sensitivity for a good are income and own-price elasticities. These measures are not constant but should vary with different levels of affluence. For example, the income elasticity of demand for a necessity such as food should be larger for a low-income country than for a high-income country. Own-price elasticities of demand should also be larger in absolute value for low-income countries than for high-income countries (Timmer, 1981). The expenditure and own-price elasticities derived from the aggregate Florida-PI model are reported in appendix tables 1-4 and have the desired properties.

Appendix table 1 presents the income elasticities (equation 5) calculated at geometric mean prices for the 144 countries. The income elasticity value measures the estimated percentage change in demand for a particular consumption category if total expenditures on all categories increase by 1 percent. From equation 5, we note that a luxury good (income elasticity greater than 1) is associated with positive values of β_i, while a necessity (income elasticity less than 1 but greater than 0) is associated with negative values of β_i. If β_i equals zero, the good is unitary elastic. The estimated budget shares for medical/health in the Democratic Republic of Congo, and recreation in the Democratic Republic of Congo, Burundi, Liberia, Zimbabwe, Ethiopia, Guinea-Bissau, Niger, Mozambique, Malawi and Rwanda were negative. The income elasticities for these countries and consumption categories are estimated using actual budget shares.

The income elasticity of demand for food, beverages, and tobacco varies greatly among countries and is highest among low-income countries, where it

Figure 2

Distribution of an additional $1 of income across 144 countries, broad categories[1]
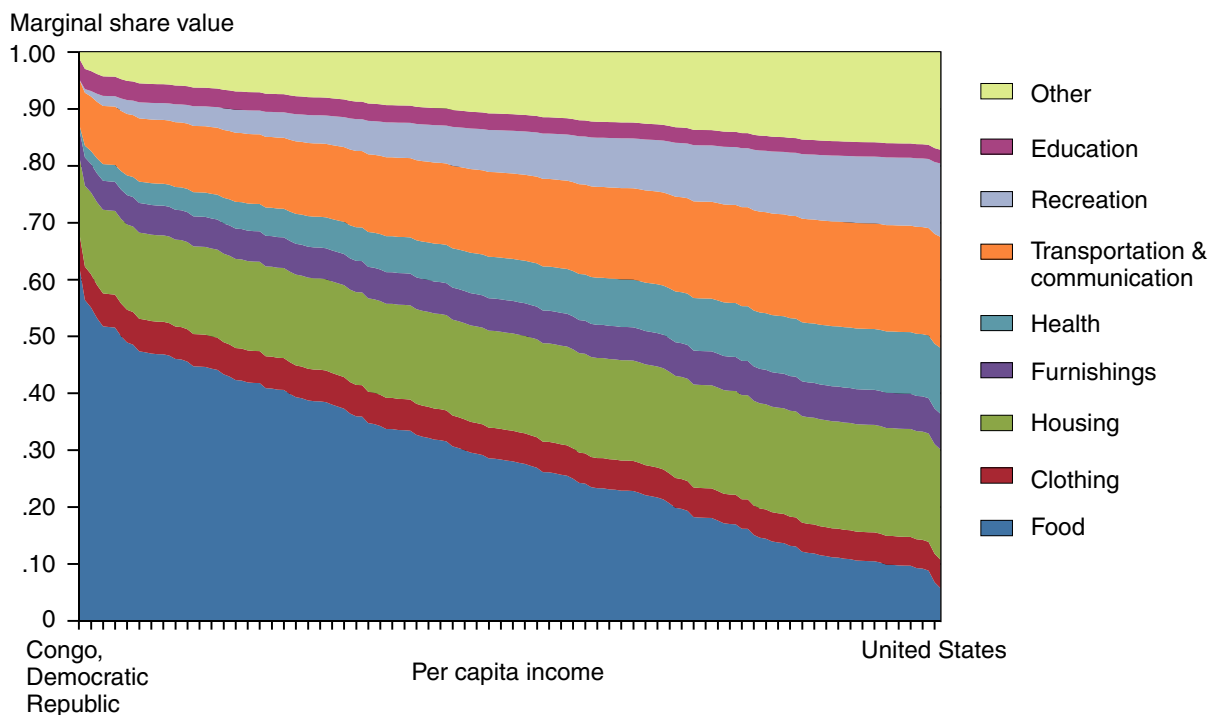
Marginal share value

Legend: Other, Education, Recreation, Transportation & communication, Health, Furnishings, Housing, Clothing, Food

x-axis: Congo, Democratic Republic — Per capita income — United States

[1]Countries are arranged in ascending order of affluence.
 Source: Author's calculations using the 2005 International Comparison Program (ICP) data.

varies from 0.85 for the Democratic Republic of Congo to 0.71 for Armenia. It ranges between 0.71 and 0.57 for middle-income countries, and from 0.56 to 0.35 for high-income countries. The average income elasticity for low-income countries is 0.78, over 1.5 times the average for high-income countries (0.50). The average food-income elasticity for high-income countries derived using 1996 ICP data (Seale et al., 2003, table 7, pp. 26-28) is smaller (0.34) than our estimate. Unlike the prior analysis, restaurant and catering expenditures are included among food in the 2005 ICP data, raising the income elasticity for food in high-income countries.

The income elasticity for clothing and footwear, another necessity, also decreases in value with income. However, given that the estimated value of β_i is close to zero, the income elasticity values are close to unity for all countries. Like clothing and footwear, education is also a necessity, and given the small value of β_i, the income elasticity for education is also close to unity for all countries. The average value ranges from 0.93 for low-income countries to 0.91 for high-income countries. Using 1996 ICP data, Seale, Regmi and Bernstein (2003, table 7, pp. 26-28) found that education was a luxury category with an income elasticity ranging from 1.08 for low-income countries to 1.07 for high-income countries. Although the two estimates are close and are likely not statistically different, the fact that the more current estimate is smaller may indicate growing global affluence.

All other consumption categories are luxuries, with income elasticities greater than 1. The elasticity values are higher for less affluent countries and span a wide range. Recreation is by far the most luxurious good, with an income elasticity of demand ranging from 13.1 for Angola to 1.25 for the United States. The categories medical/health and "other" are the next most luxurious goods, followed by transportation/communication, housing, and house furnishings. The income elasticity for medical and health also spans a wide range, from 8.6 for Liberia to 1.21 for the United States.

Using equations 6-8, three types of own-price elasticities of demand for a good can be calculated from the parameter estimates of the Florida-PI model. Appendix tables 2-4 present the estimated Frisch, Slutsky, and Cournot own-price elasticities for the 9 aggregate commodity groups, across 144 countries. In the tables, the countries are listed in ascending order of affluence. The elasticity measures perform in accordance with Timmer's proposition: own-price elasticities of demand are larger in absolute value for low-income countries than for high-income countries. The Cournot and Frisch own-price elasticities decline monotonically in absolute value from poor to rich countries. The Cournot and Frisch own-price elasticities for food are all larger than the corresponding Slutsky elasticity. However, with rising affluence the real income effect of a food-price change becomes increasingly smaller and the three elasticities converge (fig. 3). The discussion that follows is limited to the Slutsky own-price elasticity for food since it is the only measure that did not fully perform in accordance with Timmer's proposition.

In appendix table 3, the Slutsky own-price elasticity (equation 7) of demand for food, beverages, and tobacco begins at -0.23 for the Democratic Republic of Congo, increases (in absolute value) to -0.384 (Ukraine to Argentina), and declines thereafter (absolutely) to -0.24 for the United States. To clarify the

Figure 3
Own-price elasticity for food by per capita income[1]
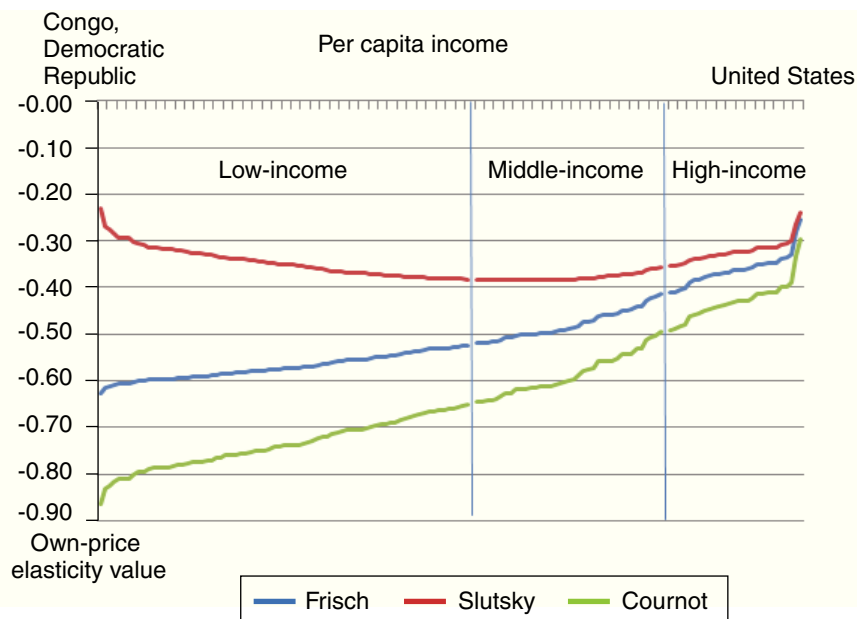
Figure 3
Own-price elasticity for food by per capita income

[1]Countries are arranged in ascending order of affluence.
Source: Author's calculations using the 2005 International Comparison Program (ICP) data.

reason for this, take the logarithmic derivative of equation 7, using equation 1 and suppressing the error term:

$$\frac{d\log(S/\phi)}{Q_c} = \frac{-\beta_i\left[\overline{w}_{ic}^2 + \beta_i(1-\beta_i)\right]}{\overline{w}_{ic}(\overline{w}_{ic}+\beta_i)(1-\overline{w}_{ic}-\beta_i)} \ . \tag{15}$$

If good i is a luxury, $\beta_i > 0$, and the derivative is negative, as real per capita income increases, the Slutsky own-price elasticity of the good decreases. If good i is a necessity, $\beta_i < 0$ so that $-\beta_i > 0$. If the term in brackets on the right side of equation 15 is positive, then both the numerator and the derivative are positive. This is the case for food, beverages, and tobacco. When $\overline{w}_{ic}$ is sufficiently large—that is, when Q_c is sufficiently small—the derivative for this good is positive for the poorest countries. Eventually, however, $\overline{w}_{ic}$ becomes sufficiently small so that the derivative becomes negative. In this case, the Slutsky own-price elasticity becomes smaller in absolute value. The turning point, when the Slutsky own-price elasticity starts declining with increasing per capita income, is at the per capita income level of Argentina— or at 22 percent of the per capita income level of the United States.

Food Subgroups—Estimates and Elasticities

Table 4 presents the estimated parameters for the second-stage model (equation 10), the food subgroups. The estimate for K3 exceeds 1, confirming the presence of heteroskedasticity in country group 3. The beta (β) estimates for cereals, meat, fish, oils and fat, and fruits and vegetables are negative, indicating that these food-product categories are (conditionally) expenditure-inelastic, while the remaining categories are conditionally expenditure-elastic.[12] The negative beta estimates for cereals and fruits/vegetables are larger (in absolute value) than for the other food categories. These categories include expenditures on grains, roots, and tubers, and both categories are particularly sensitive to the level of affluence. Table 4 also includes the diagonal elements

[12] The parameter estimates in table 4 are conditional on total per capita food expenditures, not total per capita expenditures.

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of the Slutsky matrix, which are the compensated own-price effects for each food subgroup. These effects are all negative, satisfying the law of demand.

Marginal share estimates for each food subgroup, conditional on total food expenditures, are plotted in figure 4 and reported in appendix table 8 by country. These estimates measure how an additional unit of food expenditures is allocated across the eight food subgroups. Figure 4 illustrates how the marginal share for a food category varies by country based on the level of affluence. With low-income countries, a greater portion of an additional unit of food expenditures is allocated to cereals and fruits/vegetables, which include staples such as corn meal and rice. As countries become more affluent, the portion of additional food expenditures allocated to cereals and fruits/vegetables decreases, and a greater portion is allocated to "other" food expenditures, which includes restaurant expenditures and high-end purchases, and beverages/tobacco. For instance, a dollar increase in food

Table 4
Maximum-likelihood estimates of the food subgroups model, 2005[a]

	Parameter	Standard error
Beta $\beta*$		
Cereals	-0.077	0.008*
Meat	-0.001	0.007
Fish	-0.009	0.004**
Dairy and eggs	0.002	0.004
Oils and fat	-0.014	0.003*
Fruit and vegetables	-0.039	0.007*
Food other	0.088	0.010*
Beverages and tobacco	0.051	0.008*
Alpha $\alpha*$		
Cereals	0.062	0.011*
Meat	0.143	0.010*
Fish	0.037	0.006*
Dairy and eggs	0.084	0.007*
Oils and fat	0.014	0.004*
Fruit and vegetables	0.100	0.010*
Food other	0.333	0.014*
Beverages and tobacco	0.228	0.011*
Slutsky own-price effects π_{ii}^*		
Cereals	-0.205	0.033*
Meat	-0.136	0.023*
Fish	-0.102	0.012*
Dairy and eggs	-0.100	0.015*
Oils and fat	-0.036	0.006*
Fruit and vegetables	-0.210	0.022*
Food other	-0.231	0.051*
Beverages and tobacco	-0.127	0.027
Heteroskedasticity measures		
K2	0.851	0.019*
K3	1.090	0.013*

[a]Comoros is excluded from the analysis. Egypt and Russia were reported twice and were averaged for estimation. Three country groups are considered for heteroskedasticity. * and ** denote significance at the 0.01 and 0.05 level, respectively. Alpha, beta, and pi estimates are based on equations 10a–10c.
Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

Figure 4
Distribution of an additional $1 of income across 144 countries, food subcategories[1]

Marginal share value
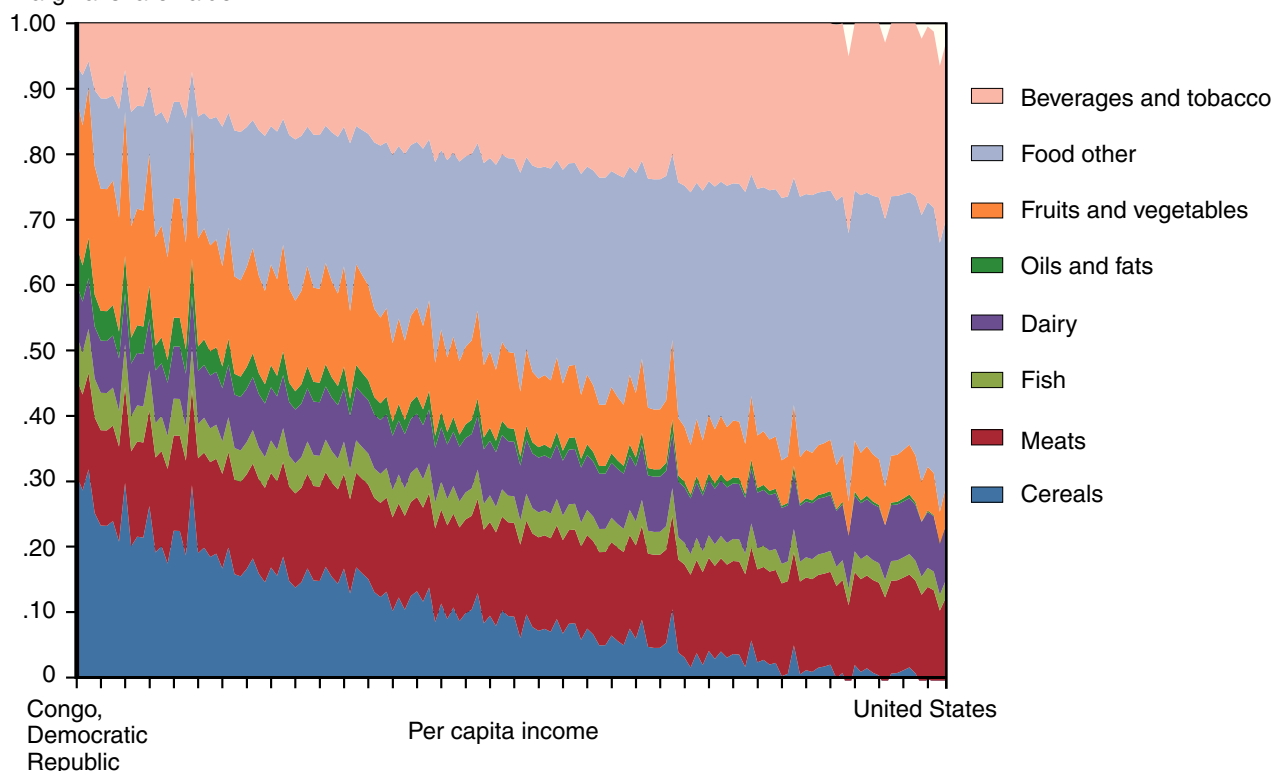
[1]Countries are arranged in ascending order of affluence.
Source: Author's calculations using the 2005 International Comparison Program (ICP) data.

expenditures results in cereal expenditures in the Democratic Republic of Congo increasing by 31 cents (appendix table 8). However, cereal expenditures in the United States decrease by 1.5 cents, indicating the lower status afforded this category by most consumers in rich countries. In contrast, expenditures on "other" food increase by only 5 cents in the Democratic Republic of Congo, but by 42 cents in the United States.

The expenditure and price elasticities calculated using the Florida-Slutsky model are conditional on a given food budget. In other words, the expenditure elasticity measures the percentage change in demand given a percentage change in total food expenditures, while the price elasticity measures the percentage response given a percentage change in price assuming a given food budget. However, the conditional elasticities can be converted to unconditional elasticities using the parameters estimated from the Florida-PI model in the first stage, as specified by equations 11-14.

The unconditional expenditure elasticity (equation 11) measures the percentage change in demand from a percentage change in overall income (or total spending). The unconditional income elasticities are all less than 1, except for "other" food and beverages/tobacco in low-income countries (appendix table 5). This is consistent with conventional theory that food is a necessity and not a luxury item in household expenditures. Given the relatively low food budget share of beverages/tobacco in many low-income

countries, this category can be considered a luxury item among consumers in some poorer countries.

Similar to the estimated income elasticity for aggregate consumption categories, the income elasticity for the food subcategories is largest in the poorer countries and declines in magnitude with affluence. Across each country, staple food items (with negative β_i^*) have smaller elasticities than the more conditionally elastic food items such as beverages/tobacco, meat, and dairy. For example, the income elasticity for cereals ranges from 0.69 in the Democratic Republic of Congo to -0.09 in the United States. In contrast, the elasticity for beverages and tobacco is higher across all countries, ranging from 7.1 in Liberia to 0.42 in the United States.

The conditional Slutsky elasticity is given by $\varepsilon_{ijc}^* = \pi_{ij}^* / \overline{w}_{ic}^*$, where π_{ij}^* is the conditional Slutsky price parameter in country c for good i with respect to good j, and $\overline{w}_{ic}^*$ is the conditional fitted budget share (at geometric mean prices) of food group $i \in S_g$ in country c. Since for a given food subgroup i, π_{ij}^* is invariant across countries, the conditional Slutsky elasticity for food subgroup i will be greater for smaller budget shares. Poorer countries typically have larger budget shares for staple items such as breads and cereals, which form a smaller share of food budget among wealthier countries. Therefore, contrary to theory, the estimated conditional Slutsky own-price elasticities for cereals may be larger for wealthier countries. This problem of a constant π_{ij}^* continues if one calculates unconditional Slutsky price elasticities from the conditional one using equation 13.

The unconditional Frisch own-price elasticities are not a function of $_{ij}$ and do not suffer the problem encountered in calculating the unconditional Slutsky elasticities. Using the estimated parameters from stage one and two and using equation 12, Frisch own-price elasticities are calculated. These unconditional own-price elasticities (appendix table 6) represent elasticities estimated at a point when the marginal utility of income is held constant. The values of the Frisch own-price elasticities lie between the values of the Slutsky own-price elasticities—when real income is held constant—and the Cournot own-price elasticities—when nominal income is held constant—and can be considered a reasonable estimate of the average own-price elasticities for the food subcategories. The Slutsky and Cournot elasticities are not estimated for these products, as their calculation using equations 13 and 14 requires the assumption of preference independence.[13]

The Frisch own-price elasticities for the food subcategories vary by affluence according to economic theory; consumers in low-income countries are more responsive to price changes than are those in higher-income countries. For instance, the value for breads and cereals ranges from 0.50 in the Democratic Republic of Congo to 0.06 in the United States. The absolute values of the own-price elasticities are smaller for food groups such as breads/cereals, oils/fats, and fruits/vegetables, and particularly large for "other" foods and beverages/tobacco. Also, low-income countries are particularly sensitive to changes in the price of "other" food and beverages/tobacco, relative to middle- and high-income countries. Given a 1-percent increase in the price of "other" food, consumption in this category declines on average by more than 1 percent in low-income countries but by less than 0.5 percent in high-income countries.

[13]Note that the Frisch own-price elasticity is the product of the income flexibility, unconditional expenditure elasticity for food as a group, and conditional expenditure elasticity for the food subgroup resulting in a positive estimate when the subgroup is inferior (negative conditional expenditure elasticity). This was the case for the cereals and oils categories in the U.S. and a few other rich countries, which is counter intuitive. Although positive, these estimates were small and replaced with zero. See Appendix table 6.

Conclusion

This report provides income and price elasticities across 144 countries for 9 aggregate consumption categories and 8 food subcategories. No empirical work to date has been conducted across as many countries and consumption categories. The results of this research confirm many of the results obtained and established by earlier studies. Low-income countries spend a greater portion of their budget on necessities, such as food, while richer countries spend a greater proportion of their income on luxuries, such as recreation. Low-value staples, such as cereals, account for a larger share of the food budget in poorer countries, while high-value food items are a larger share of the food budget in richer countries. Low-income countries are also more responsive to changes in income and food prices and, therefore, make larger adjustments to their food consumption patterns when incomes and prices change. However, our study illustrates that adjustments to price and income changes are not made uniformly across all food categories. Staple food consumption changes the least, while consumption of higher-value food items changes the most.

The income and price elasticities estimated here can be used as inputs in future work designed to forecast future food demand and supply, and in projects designed to simulate the effects of different government policy options. In addition to the actual elasticity estimates, parameters estimated from our models can be used (with more recent expenditure data) to estimate new elasticities for more recent years for the countries included in our analysis, as well as for other countries (Cox and Alm, 2007).

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Income elasticities for aggregate consumption categories, 144 countries, 2005

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
Low-income countries:									
Congo, Dem. Rep.	0.854	0.970	1.088	1.061	1.573[a]	1.381	3.876[a]	0.939	2.161[a]
Burundi	0.839	0.969	1.084	1.059	1.573[a]	1.306	1.868[a]	0.937	1.640[a]
Liberia	0.836	0.969	1.083	1.059	8.620	1.295	2.525[a]	0.936	1.415[a]
Zimbabwe	0.831	0.969	1.082	1.058	4.286	1.281	2.050[a]	0.936	4.696
Ethiopia	0.827	0.968	1.081	1.058	3.275	1.270	5.406[a]	0.935	3.464
Niger	0.827	0.968	1.081	1.058	3.219	1.269	1.485[a]	0.935	3.399
Guinea-Bissau	0.827	0.968	1.081	1.058	3.174	1.269	1.659[a]	0.935	3.346
Mozambique	0.822	0.968	1.080	1.057	2.665	1.259	2.163[a]	0.934	2.764
Malawi	0.819	0.968	1.079	1.057	2.424	1.252	1.325[a]	0.934	2.496
Rwanda	0.818	0.968	1.079	1.057	2.355	1.250	3.074[a]	0.934	2.419
Angola	0.814	0.968	1.078	1.056	2.182	1.244	13.053	0.933	2.231
Chad	0.814	0.968	1.078	1.056	2.160	1.243	11.097	0.933	2.208
Gambia, The	0.813	0.968	1.078	1.056	2.134	1.241	9.380	0.933	2.179
Central African Republic	0.813	0.968	1.078	1.056	2.120	1.241	8.708	0.933	2.164
Mali	0.813	0.968	1.078	1.056	2.118	1.241	8.614	0.933	2.162
Tanzania	0.812	0.968	1.078	1.056	2.092	1.239	7.524	0.933	2.133
Sierra Leone	0.810	0.968	1.077	1.056	2.031	1.236	5.837	0.933	2.069
Guinea	0.810	0.968	1.077	1.056	2.021	1.236	5.624	0.933	2.058
Burkina Faso	0.808	0.968	1.077	1.056	1.987	1.234	4.987	0.933	2.021
Uganda	0.806	0.968	1.077	1.056	1.917	1.230	4.052	0.932	1.946
Madagascar	0.805	0.968	1.077	1.056	1.913	1.230	4.012	0.932	1.942
Zambia	0.805	0.968	1.077	1.056	1.909	1.229	3.961	0.932	1.937
Congo, Rep.	0.804	0.968	1.076	1.055	1.886	1.228	3.733	0.932	1.913
Togo	0.803	0.968	1.076	1.055	1.870	1.227	3.590	0.932	1.897
Nepal	0.801	0.968	1.076	1.055	1.820	1.223	3.189	0.932	1.843
Ghana	0.799	0.968	1.076	1.055	1.795	1.221	3.022	0.931	1.817
Benin	0.797	0.968	1.075	1.055	1.761	1.219	2.813	0.931	1.781
Mauritania	0.796	0.968	1.075	1.055	1.756	1.218	2.787	0.931	1.776
Bangladesh	0.795	0.968	1.075	1.055	1.740	1.217	2.696	0.931	1.758
Côte d'Ivoire	0.795	0.968	1.075	1.055	1.735	1.216	2.672	0.931	1.753
Lao PDR	0.795	0.968	1.075	1.055	1.733	1.216	2.665	0.931	1.752
Kenya	0.791	0.967	1.075	1.055	1.691	1.212	2.463	0.931	1.708
Djibouti	0.791	0.967	1.075	1.055	1.689	1.212	2.451	0.931	1.705
Nigeria	0.790	0.967	1.075	1.054	1.680	1.211	2.413	0.930	1.696
Senegal	0.790	0.967	1.075	1.054	1.678	1.211	2.405	0.930	1.694
Cambodia	0.787	0.967	1.074	1.054	1.650	1.208	2.288	0.930	1.664
Cameroon	0.785	0.967	1.074	1.054	1.628	1.206	2.206	0.930	1.642
São Tomé and Principe	0.784	0.967	1.074	1.054	1.621	1.205	2.179	0.930	1.634

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Income elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
India	0.782	0.967	1.074	1.054	1.608	1.204	2.133	0.930	1.621
Yemen, Rep.	0.781	0.967	1.073	1.054	1.603	1.203	2.116	0.930	1.615
Vietnam	0.781	0.967	1.073	1.054	1.602	1.203	2.114	0.930	1.615
Mongolia	0.781	0.967	1.073	1.054	1.597	1.203	2.097	0.929	1.610
Iraq	0.779	0.967	1.073	1.054	1.584	1.201	2.052	0.929	1.595
Bhutan	0.777	0.967	1.073	1.054	1.572	1.200	2.016	0.929	1.584
China	0.775	0.967	1.073	1.054	1.562	1.198	1.983	0.929	1.573
Sudan	0.771	0.967	1.072	1.053	1.538	1.195	1.912	0.929	1.548
Lesotho	0.769	0.967	1.072	1.053	1.525	1.194	1.876	0.928	1.535
Tajikistan	0.769	0.967	1.072	1.053	1.524	1.193	1.873	0.928	1.533
Maldives	0.763	0.967	1.072	1.053	1.497	1.190	1.800	0.928	1.505
Morocco	0.762	0.967	1.072	1.053	1.492	1.189	1.789	0.928	1.501
Pakistan	0.760	0.967	1.071	1.053	1.485	1.188	1.770	0.927	1.493
Indonesia	0.757	0.967	1.071	1.053	1.474	1.186	1.742	0.927	1.481
Kyrgyz Republic	0.757	0.967	1.071	1.053	1.473	1.186	1.741	0.927	1.481
Philippines	0.756	0.967	1.071	1.053	1.470	1.186	1.733	0.927	1.478
Cape Verde	0.756	0.967	1.071	1.053	1.469	1.185	1.731	0.927	1.477
Bolivia	0.756	0.967	1.071	1.053	1.468	1.185	1.727	0.927	1.475
Namibia	0.752	0.967	1.071	1.052	1.453	1.183	1.693	0.927	1.460
Sri Lanka	0.750	0.967	1.071	1.052	1.447	1.182	1.679	0.927	1.454
Botswana	0.749	0.967	1.070	1.052	1.443	1.181	1.670	0.926	1.450
Gabon	0.747	0.967	1.070	1.052	1.438	1.180	1.658	0.926	1.445
Azerbaijan	0.746	0.967	1.070	1.052	1.436	1.180	1.653	0.926	1.443
Syrian Arab Republic	0.745	0.966	1.070	1.052	1.432	1.179	1.645	0.926	1.439
Equatorial Guinea	0.740	0.966	1.070	1.052	1.418	1.177	1.613	0.926	1.424
Paraguay	0.738	0.966	1.070	1.052	1.413	1.176	1.603	0.926	1.419
Fiji	0.735	0.966	1.069	1.052	1.407	1.175	1.591	0.925	1.413
Swaziland	0.732	0.966	1.069	1.052	1.401	1.174	1.577	0.925	1.406
Moldova	0.731	0.966	1.069	1.052	1.398	1.173	1.571	0.925	1.403
Egypt, Arab Rep.	0.730	0.966	1.069	1.051	1.394	1.173	1.564	0.925	1.400
Ecuador	0.726	0.966	1.069	1.051	1.386	1.171	1.548	0.925	1.391
Jordan	0.725	0.966	1.069	1.051	1.385	1.171	1.546	0.925	1.390
Georgia	0.724	0.966	1.069	1.051	1.383	1.170	1.542	0.924	1.388
Thailand	0.723	0.966	1.069	1.051	1.381	1.170	1.537	0.924	1.386
Colombia	0.722	0.966	1.069	1.051	1.379	1.170	1.533	0.924	1.384
Albania	0.720	0.966	1.068	1.051	1.376	1.169	1.527	0.924	1.381
Tunisia	0.719	0.966	1.068	1.051	1.373	1.168	1.522	0.924	1.378
Peru	0.716	0.966	1.068	1.051	1.369	1.167	1.513	0.924	1.373
Armenia	0.714	0.966	1.068	1.051	1.365	1.167	1.505	0.924	1.369

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Income elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
Middle-income countries:									
Venezuela, RB	0.708	0.966	1.068	1.051	1.356	1.165	1.488	0.923	1.360
Malaysia	0.707	0.966	1.068	1.051	1.355	1.165	1.487	0.923	1.359
Ukraine	0.706	0.966	1.068	1.051	1.353	1.164	1.483	0.923	1.357
Brazil	0.704	0.966	1.068	1.051	1.350	1.164	1.478	0.923	1.354
Montenegro	0.703	0.966	1.067	1.051	1.348	1.163	1.474	0.923	1.352
South Africa	0.698	0.966	1.067	1.050	1.342	1.162	1.464	0.923	1.346
Macedonia, FYR	0.692	0.966	1.067	1.050	1.335	1.160	1.450	0.922	1.339
Turkey	0.691	0.966	1.067	1.050	1.333	1.160	1.447	0.922	1.337
Bosnia and Herzegovina	0.685	0.966	1.067	1.050	1.327	1.158	1.436	0.922	1.331
Serbia	0.683	0.966	1.067	1.050	1.325	1.158	1.433	0.922	1.329
Belarus	0.683	0.966	1.067	1.050	1.325	1.158	1.432	0.922	1.329
Romania	0.682	0.966	1.066	1.050	1.323	1.157	1.429	0.922	1.327
Saudi Arabia	0.681	0.966	1.066	1.050	1.323	1.157	1.428	0.922	1.326
Uruguay	0.679	0.966	1.066	1.050	1.321	1.157	1.425	0.921	1.325
Mauritius	0.679	0.966	1.066	1.050	1.321	1.157	1.425	0.921	1.325
Chile	0.679	0.966	1.066	1.050	1.320	1.157	1.424	0.921	1.324
Kazakhstan	0.676	0.966	1.066	1.050	1.317	1.156	1.419	0.921	1.321
Russian Federation	0.672	0.965	1.066	1.050	1.314	1.155	1.412	0.921	1.317
Argentina	0.670	0.965	1.066	1.050	1.312	1.155	1.409	0.921	1.315
Bulgaria	0.667	0.965	1.066	1.050	1.310	1.154	1.406	0.921	1.313
Oman	0.664	0.965	1.066	1.050	1.307	1.153	1.401	0.921	1.310
Iran, Islamic Rep.	0.657	0.965	1.065	1.049	1.301	1.152	1.391	0.920	1.304
Latvia	0.648	0.965	1.065	1.049	1.295	1.150	1.380	0.920	1.298
Mexico	0.646	0.965	1.065	1.049	1.293	1.150	1.378	0.920	1.296
Lebanon	0.642	0.965	1.065	1.049	1.290	1.149	1.373	0.919	1.293
Poland	0.628	0.965	1.065	1.049	1.282	1.147	1.359	0.919	1.285
Croatia	0.627	0.965	1.065	1.049	1.281	1.147	1.358	0.919	1.284
Macao, China	0.626	0.965	1.064	1.049	1.281	1.147	1.358	0.919	1.284
Lithuania	0.626	0.965	1.064	1.049	1.281	1.147	1.358	0.919	1.284
Estonia	0.620	0.965	1.064	1.049	1.278	1.146	1.352	0.918	1.280
Brunei Darussalam	0.614	0.965	1.064	1.049	1.274	1.145	1.347	0.918	1.277
Slovak Republic	0.612	0.965	1.064	1.049	1.273	1.145	1.345	0.918	1.276
Hungary	0.611	0.965	1.064	1.049	1.273	1.144	1.345	0.918	1.276
Korea, Rep.	0.600	0.965	1.064	1.048	1.268	1.143	1.336	0.917	1.270
Bahrain	0.600	0.965	1.064	1.048	1.268	1.143	1.336	0.917	1.270
Czech Republic	0.583	0.965	1.063	1.048	1.261	1.141	1.325	0.917	1.263
Slovenia	0.575	0.965	1.063	1.048	1.258	1.140	1.321	0.916	1.260
Israel	0.572	0.965	1.063	1.048	1.257	1.140	1.319	0.916	1.259

Income elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
High-income countries:									
Portugal	0.564	0.965	1.063	1.048	1.254	1.139	1.315	0.916	1.256
Qatar	0.561	0.965	1.063	1.048	1.253	1.139	1.313	0.916	1.255
Singapore	0.558	0.965	1.063	1.048	1.252	1.138	1.312	0.916	1.254
Malta	0.550	0.964	1.063	1.048	1.249	1.138	1.308	0.916	1.251
Kuwait	0.547	0.964	1.063	1.048	1.248	1.137	1.307	0.915	1.251
New Zealand	0.530	0.964	1.062	1.048	1.243	1.136	1.299	0.915	1.245
Finland	0.525	0.964	1.062	1.048	1.242	1.135	1.297	0.915	1.244
Taiwan, China	0.523	0.964	1.062	1.048	1.242	1.135	1.296	0.915	1.244
Spain	0.516	0.964	1.062	1.047	1.240	1.135	1.294	0.914	1.242
Italy	0.513	0.964	1.062	1.047	1.239	1.134	1.293	0.914	1.241
Ireland	0.508	0.964	1.062	1.047	1.238	1.134	1.291	0.914	1.240
Denmark	0.507	0.964	1.062	1.047	1.238	1.134	1.291	0.914	1.240
Sweden	0.503	0.964	1.062	1.047	1.237	1.134	1.289	0.914	1.239
Hong Kong, China	0.501	0.964	1.062	1.047	1.236	1.134	1.288	0.914	1.238
Australia	0.495	0.964	1.062	1.047	1.235	1.133	1.287	0.914	1.237
Cyprus	0.494	0.964	1.062	1.047	1.235	1.133	1.286	0.914	1.237
Belgium	0.493	0.964	1.062	1.047	1.235	1.133	1.286	0.914	1.237
Japan	0.492	0.964	1.062	1.047	1.235	1.133	1.286	0.914	1.236
France	0.487	0.964	1.062	1.047	1.233	1.133	1.284	0.914	1.235
Germany	0.477	0.964	1.061	1.047	1.232	1.132	1.281	0.913	1.233
Canada	0.477	0.964	1.061	1.047	1.231	1.132	1.281	0.913	1.233
Iceland	0.474	0.964	1.061	1.047	1.231	1.132	1.280	0.913	1.233
Netherlands	0.473	0.964	1.061	1.047	1.231	1.132	1.280	0.913	1.232
Norway	0.473	0.964	1.061	1.047	1.231	1.132	1.280	0.913	1.232
United Kingdom	0.462	0.964	1.061	1.047	1.229	1.131	1.277	0.913	1.230
Switzerland	0.460	0.964	1.061	1.047	1.228	1.131	1.276	0.913	1.230
Austria	0.450	0.964	1.061	1.047	1.226	1.130	1.274	0.913	1.228
Luxembourg	0.386	0.964	1.060	1.047	1.217	1.127	1.260	0.911	1.219
United States	0.346	0.964	1.060	1.046	1.213	1.126	1.254	0.910	1.214
Low-Income average	0.778	0.967	1.074	1.054	1.851	1.211	2.901	0.930	1.795
Middle-Income average	0.655	0.965	1.066	1.050	1.306	1.153	1.401	0.920	1.309
High-Income average	0.495	0.964	1.062	1.047	1.236	1.133	1.288	0.914	1.238

Countries are reported based on ascending per capita real income levels.

[a]As the estimated budget shares for medical and health, recreation, and "other" were negative, these values are calculated using the actual budget shares. Calculated using equation (5).

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

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Appendix table 2
Frisch own-price elasticities for aggregate consumption categories, 144 countries, 2005

Country	Food, beverages & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communications	Recreation	Education	Other
Low-income countries:									
Congo, Dem. Rep.	-0.627	-0.711	-0.798	-0.779	-1.154[a]	-1.013	-2.843[a]	-0.689	-1.585[a]
Burundi	-0.616	-0.711	-0.795	-0.777	-1.154[a]	-0.958	-1.371[a]	-0.687	-1.203[a]
Liberia	-0.613	-0.711	-0.794	-0.777	-6.323	-0.950	-1.852[a]	-0.687	-8.254
Zimbabwe	-0.610	-0.711	-0.793	-0.776	-3.144	-0.939	-1.504[a]	-0.686	-3.444
Ethiopia	-0.607	-0.710	-0.793	-0.776	-2.403	-0.932	-3.966[a]	-0.686	-2.541
Niger	-0.607	-0.710	-0.793	-0.776	-2.362	-0.931	-1.090[a]	-0.686	-2.493
Guinea-Bissau	-0.607	-0.710	-0.793	-0.776	-2.329	-0.931	-1.217[a]	-0.686	-2.455
Mozambique	-0.603	-0.710	-0.792	-0.775	-1.955	-0.924	-1.587[a]	-0.685	-2.027
Malawi	-0.601	-0.710	-0.792	-0.775	-1.778	-0.919	-0.972[a]	-0.685	-1.831
Rwanda	-0.600	-0.710	-0.791	-0.775	-1.727	-0.917	-2.255[a]	-0.685	-1.775
Angola	-0.597	-0.710	-0.791	-0.775	-1.601	-0.912	-9.575	-0.685	-1.637
Chad	-0.597	-0.710	-0.791	-0.775	-1.585	-0.912	-8.140	-0.685	-1.619
Gambia, The	-0.596	-0.710	-0.791	-0.775	-1.565	-0.911	-6.881	-0.685	-1.598
Central African Republic	-0.596	-0.710	-0.791	-0.775	-1.555	-0.910	-6.388	-0.685	-1.588
Mali	-0.596	-0.710	-0.791	-0.775	-1.554	-0.910	-6.319	-0.685	-1.586
Tanzania	-0.596	-0.710	-0.791	-0.775	-1.534	-0.909	-5.519	-0.684	-1.565
Sierra Leone	-0.594	-0.710	-0.790	-0.775	-1.490	-0.907	-4.282	-0.684	-1.517
Guinea	-0.594	-0.710	-0.790	-0.775	-1.483	-0.907	-4.125	-0.684	-1.510
Burkina Faso	-0.593	-0.710	-0.790	-0.775	-1.457	-0.905	-3.658	-0.684	-1.482
Uganda	-0.591	-0.710	-0.790	-0.774	-1.406	-0.902	-2.972	-0.684	-1.428
Madagascar	-0.591	-0.710	-0.790	-0.774	-1.404	-0.902	-2.943	-0.684	-1.425
Zambia	-0.591	-0.710	-0.790	-0.774	-1.400	-0.902	-2.905	-0.684	-1.421
Congo, Rep.	-0.590	-0.710	-0.790	-0.774	-1.384	-0.901	-2.739	-0.684	-1.404
Togo	-0.589	-0.710	-0.790	-0.774	-1.372	-0.900	-2.633	-0.684	-1.391
Nepal	-0.587	-0.710	-0.789	-0.774	-1.335	-0.897	-2.339	-0.683	-1.352
Ghana	-0.586	-0.710	-0.789	-0.774	-1.317	-0.896	-2.217	-0.683	-1.333
Benin	-0.584	-0.710	-0.789	-0.774	-1.292	-0.894	-2.064	-0.683	-1.306
Mauritania	-0.584	-0.710	-0.789	-0.774	-1.288	-0.894	-2.044	-0.683	-1.303
Bangladesh	-0.583	-0.710	-0.789	-0.774	-1.276	-0.893	-1.978	-0.683	-1.290
Côte d'Ivoire	-0.583	-0.710	-0.789	-0.774	-1.273	-0.892	-1.960	-0.683	-1.286
Lao PDR	-0.583	-0.710	-0.789	-0.774	-1.272	-0.892	-1.955	-0.683	-1.285
Kenya	-0.580	-0.710	-0.788	-0.774	-1.241	-0.889	-1.807	-0.683	-1.253
Djibouti	-0.580	-0.710	-0.788	-0.774	-1.239	-0.889	-1.798	-0.683	-1.251
Nigeria	-0.580	-0.710	-0.788	-0.773	-1.232	-0.889	-1.770	-0.683	-1.244
Senegal	-0.579	-0.710	-0.788	-0.773	-1.231	-0.888	-1.764	-0.683	-1.243
Cambodia	-0.577	-0.710	-0.788	-0.773	-1.210	-0.886	-1.678	-0.682	-1.221
Cameroon	-0.576	-0.710	-0.788	-0.773	-1.194	-0.885	-1.618	-0.682	-1.204
São Tomé and Principe	-0.575	-0.710	-0.788	-0.773	-1.189	-0.884	-1.598	-0.682	-1.199

Frisch own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
India	-0.574	-0.710	-0.788	-0.773	-1.179	-0.883	-1.565	-0.682	-1.189
Yemen, Rep.	-0.573	-0.710	-0.787	-0.773	-1.176	-0.883	-1.553	-0.682	-1.185
Vietnam	-0.573	-0.710	-0.787	-0.773	-1.175	-0.883	-1.551	-0.682	-1.184
Mongolia	-0.573	-0.709	-0.787	-0.773	-1.172	-0.882	-1.539	-0.682	-1.181
Iraq	-0.571	-0.709	-0.787	-0.773	-1.162	-0.881	-1.505	-0.682	-1.170
Bhutan	-0.570	-0.709	-0.787	-0.773	-1.153	-0.880	-1.479	-0.682	-1.162
China	-0.569	-0.709	-0.787	-0.773	-1.146	-0.879	-1.455	-0.681	-1.154
Sudan	-0.566	-0.709	-0.787	-0.773	-1.128	-0.877	-1.403	-0.681	-1.135
Lesotho	-0.564	-0.709	-0.787	-0.773	-1.119	-0.876	-1.376	-0.681	-1.126
Tajikistan	-0.564	-0.709	-0.786	-0.773	-1.118	-0.875	-1.374	-0.681	-1.125
Maldives	-0.560	-0.709	-0.786	-0.772	-1.098	-0.873	-1.320	-0.681	-1.104
Morocco	-0.559	-0.709	-0.786	-0.772	-1.095	-0.872	-1.312	-0.680	-1.101
Pakistan	-0.558	-0.709	-0.786	-0.772	-1.089	-0.871	-1.298	-0.680	-1.095
Indonesia	-0.556	-0.709	-0.786	-0.772	-1.081	-0.870	-1.278	-0.680	-1.087
Kyrgyz Republic	-0.556	-0.709	-0.786	-0.772	-1.081	-0.870	-1.277	-0.680	-1.086
Philippines	-0.555	-0.709	-0.786	-0.772	-1.078	-0.870	-1.271	-0.680	-1.084
Cape Verde	-0.555	-0.709	-0.786	-0.772	-1.078	-0.870	-1.270	-0.680	-1.083
Bolivia	-0.554	-0.709	-0.786	-0.772	-1.077	-0.869	-1.267	-0.680	-1.082
Namibia	-0.551	-0.709	-0.785	-0.772	-1.066	-0.868	-1.242	-0.680	-1.071
Sri Lanka	-0.550	-0.709	-0.785	-0.772	-1.062	-0.867	-1.232	-0.680	-1.067
Botswana	-0.549	-0.709	-0.785	-0.772	-1.059	-0.867	-1.225	-0.680	-1.064
Gabon	-0.548	-0.709	-0.785	-0.772	-1.055	-0.866	-1.216	-0.679	-1.060
Azerbaijan	-0.547	-0.709	-0.785	-0.772	-1.053	-0.866	-1.213	-0.679	-1.058
Syrian Arab Republic	-0.546	-0.709	-0.785	-0.772	-1.051	-0.865	-1.207	-0.679	-1.055
Equatorial Guinea	-0.543	-0.709	-0.785	-0.772	-1.040	-0.863	-1.184	-0.679	-1.044
Paraguay	-0.541	-0.709	-0.785	-0.772	-1.037	-0.863	-1.176	-0.679	-1.041
Fiji	-0.539	-0.709	-0.784	-0.771	-1.032	-0.862	-1.167	-0.679	-1.037
Swaziland	-0.537	-0.709	-0.784	-0.771	-1.028	-0.861	-1.157	-0.679	-1.032
Moldova	-0.536	-0.709	-0.784	-0.771	-1.025	-0.861	-1.152	-0.679	-1.029
Egypt, Arab Rep.	-0.535	-0.709	-0.784	-0.771	-1.023	-0.860	-1.147	-0.678	-1.027
Ecuador	-0.532	-0.709	-0.784	-0.771	-1.017	-0.859	-1.135	-0.678	-1.021
Jordan	-0.532	-0.709	-0.784	-0.771	-1.016	-0.859	-1.134	-0.678	-1.020
Georgia	-0.531	-0.709	-0.784	-0.771	-1.015	-0.859	-1.131	-0.678	-1.019
Thailand	-0.530	-0.709	-0.784	-0.771	-1.013	-0.858	-1.127	-0.678	-1.017
Colombia	-0.530	-0.709	-0.784	-0.771	-1.012	-0.858	-1.125	-0.678	-1.015
Albania	-0.528	-0.709	-0.784	-0.771	-1.009	-0.857	-1.120	-0.678	-1.013
Tunisia	-0.527	-0.709	-0.784	-0.771	-1.007	-0.857	-1.116	-0.678	-1.011
Peru	-0.525	-0.709	-0.784	-0.771	-1.004	-0.856	-1.110	-0.678	-1.007
Armenia	-0.523	-0.709	-0.783	-0.771	-1.001	-0.856	-1.104	-0.678	-1.004

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Frisch own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communications	Recreation	Education	Other
Middle-income countries:									
Venezuela, RB	-0.519	-0.709	-0.783	-0.771	-0.994	-0.854	-1.091	-0.677	-0.998
Malaysia	-0.519	-0.709	-0.783	-0.771	-0.994	-0.854	-1.091	-0.677	-0.997
Ukraine	-0.518	-0.709	-0.783	-0.771	-0.993	-0.854	-1.088	-0.677	-0.996
Brazil	-0.516	-0.709	-0.783	-0.771	-0.990	-0.854	-1.084	-0.677	-0.994
Montenegro	-0.515	-0.709	-0.783	-0.771	-0.989	-0.853	-1.081	-0.677	-0.992
South Africa	-0.512	-0.708	-0.783	-0.771	-0.985	-0.852	-1.074	-0.677	-0.988
Macedonia, FYR	-0.508	-0.708	-0.783	-0.770	-0.979	-0.851	-1.063	-0.677	-0.982
Turkey	-0.507	-0.708	-0.783	-0.770	-0.978	-0.851	-1.062	-0.676	-0.981
Bosnia and Herze-govina	-0.503	-0.708	-0.782	-0.770	-0.973	-0.850	-1.053	-0.676	-0.976
Serbia	-0.501	-0.708	-0.782	-0.770	-0.972	-0.849	-1.051	-0.676	-0.975
Belarus	-0.501	-0.708	-0.782	-0.770	-0.972	-0.849	-1.051	-0.676	-0.975
Romania	-0.500	-0.708	-0.782	-0.770	-0.971	-0.849	-1.048	-0.676	-0.973
Saudi Arabia	-0.499	-0.708	-0.782	-0.770	-0.970	-0.849	-1.047	-0.676	-0.973
Uruguay	-0.498	-0.708	-0.782	-0.770	-0.969	-0.849	-1.045	-0.676	-0.972
Mauritius	-0.498	-0.708	-0.782	-0.770	-0.969	-0.849	-1.045	-0.676	-0.972
Chile	-0.498	-0.708	-0.782	-0.770	-0.969	-0.849	-1.045	-0.676	-0.971
Kazakhstan	-0.496	-0.708	-0.782	-0.770	-0.966	-0.848	-1.041	-0.676	-0.969
Russian Federation	-0.493	-0.708	-0.782	-0.770	-0.964	-0.847	-1.036	-0.676	-0.966
Argentina	-0.491	-0.708	-0.782	-0.770	-0.962	-0.847	-1.034	-0.676	-0.965
Bulgaria	-0.490	-0.708	-0.782	-0.770	-0.961	-0.847	-1.031	-0.675	-0.963
Oman	-0.487	-0.708	-0.782	-0.770	-0.959	-0.846	-1.028	-0.675	-0.961
Iran, Islamic Rep.	-0.482	-0.708	-0.782	-0.770	-0.954	-0.845	-1.020	-0.675	-0.957
Latvia	-0.475	-0.708	-0.781	-0.770	-0.950	-0.844	-1.012	-0.675	-0.952
Mexico	-0.474	-0.708	-0.781	-0.770	-0.949	-0.844	-1.011	-0.675	-0.951
Lebanon	-0.471	-0.708	-0.781	-0.770	-0.947	-0.843	-1.007	-0.674	-0.949
Poland	-0.461	-0.708	-0.781	-0.769	-0.940	-0.841	-0.997	-0.674	-0.942
Croatia	-0.460	-0.708	-0.781	-0.769	-0.940	-0.841	-0.996	-0.674	-0.942
Macao, China	-0.459	-0.708	-0.781	-0.769	-0.940	-0.841	-0.996	-0.674	-0.942
Lithuania	-0.459	-0.708	-0.781	-0.769	-0.940	-0.841	-0.996	-0.674	-0.942
Estonia	-0.455	-0.708	-0.781	-0.769	-0.937	-0.840	-0.992	-0.674	-0.939
Brunei Darussalam	-0.450	-0.708	-0.781	-0.769	-0.935	-0.840	-0.988	-0.673	-0.937
Slovak Republic	-0.449	-0.708	-0.781	-0.769	-0.934	-0.840	-0.987	-0.673	-0.936
Hungary	-0.448	-0.708	-0.781	-0.769	-0.934	-0.840	-0.987	-0.673	-0.936
Korea, Rep.	-0.440	-0.708	-0.780	-0.769	-0.930	-0.838	-0.980	-0.673	-0.932
Bahrain	-0.440	-0.708	-0.780	-0.769	-0.930	-0.838	-0.980	-0.673	-0.932
Czech Republic	-0.428	-0.708	-0.780	-0.769	-0.925	-0.837	-0.972	-0.672	-0.927
Slovenia	-0.422	-0.708	-0.780	-0.769	-0.923	-0.836	-0.969	-0.672	-0.924
Israel	-0.420	-0.708	-0.780	-0.769	-0.922	-0.836	-0.968	-0.672	-0.923

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Frisch own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
High-income countries:									
Portugal	-0.414	-0.708	-0.780	-0.769	-0.920	-0.835	-0.964	-0.672	-0.921
Qatar	-0.411	-0.708	-0.780	-0.769	-0.919	-0.835	-0.963	-0.672	-0.921
Singapore	-0.410	-0.708	-0.780	-0.769	-0.918	-0.835	-0.962	-0.672	-0.920
Malta	-0.403	-0.707	-0.780	-0.769	-0.916	-0.834	-0.959	-0.672	-0.918
Kuwait	-0.401	-0.707	-0.779	-0.769	-0.916	-0.834	-0.958	-0.672	-0.917
New Zealand	-0.388	-0.707	-0.779	-0.768	-0.912	-0.833	-0.953	-0.671	-0.914
Finland	-0.385	-0.707	-0.779	-0.768	-0.911	-0.833	-0.952	-0.671	-0.913
Taiwan, China	-0.384	-0.707	-0.779	-0.768	-0.911	-0.833	-0.951	-0.671	-0.912
Spain	-0.379	-0.707	-0.779	-0.768	-0.910	-0.832	-0.949	-0.671	-0.911
Italy	-0.376	-0.707	-0.779	-0.768	-0.909	-0.832	-0.948	-0.671	-0.910
Ireland	-0.373	-0.707	-0.779	-0.768	-0.908	-0.832	-0.947	-0.671	-0.910
Denmark	-0.372	-0.707	-0.779	-0.768	-0.908	-0.832	-0.947	-0.671	-0.909
Sweden	-0.369	-0.707	-0.779	-0.768	-0.907	-0.832	-0.946	-0.670	-0.909
Hong Kong, China	-0.367	-0.707	-0.779	-0.768	-0.907	-0.831	-0.945	-0.670	-0.908
Australia	-0.363	-0.707	-0.779	-0.768	-0.906	-0.831	-0.944	-0.670	-0.907
Cyprus	-0.362	-0.707	-0.779	-0.768	-0.906	-0.831	-0.943	-0.670	-0.907
Belgium	-0.361	-0.707	-0.779	-0.768	-0.906	-0.831	-0.943	-0.670	-0.907
Japan	-0.361	-0.707	-0.779	-0.768	-0.906	-0.831	-0.943	-0.670	-0.907
France	-0.357	-0.707	-0.779	-0.768	-0.905	-0.831	-0.942	-0.670	-0.906
Germany	-0.350	-0.707	-0.779	-0.768	-0.903	-0.830	-0.940	-0.670	-0.905
Canada	-0.350	-0.707	-0.779	-0.768	-0.903	-0.830	-0.940	-0.670	-0.905
Iceland	-0.348	-0.707	-0.779	-0.768	-0.903	-0.830	-0.939	-0.670	-0.904
Netherlands	-0.347	-0.707	-0.779	-0.768	-0.903	-0.830	-0.939	-0.670	-0.904
Norway	-0.347	-0.707	-0.779	-0.768	-0.903	-0.830	-0.939	-0.670	-0.904
United Kingdom	-0.339	-0.707	-0.779	-0.768	-0.901	-0.830	-0.937	-0.670	-0.903
Switzerland	-0.337	-0.707	-0.778	-0.768	-0.901	-0.830	-0.936	-0.670	-0.902
Austria	-0.330	-0.707	-0.778	-0.768	-0.900	-0.829	-0.934	-0.669	-0.901
Luxembourg	-0.283	-0.707	-0.778	-0.768	-0.893	-0.827	-0.924	-0.668	-0.894
United States	-0.254	-0.707	-0.778	-0.768	-0.890	-0.826	-0.920	-0.668	-0.891
Low-Income average	-0.571	-0.710	-0.788	-0.773	-1.358	-0.889	-2.128	-0.682	-1.410
Middle-Income average	-0.481	-0.708	-0.782	-0.770	-0.958	-0.846	-1.028	-0.675	-0.960
High-Income average	-0.363	-0.707	-0.779	-0.768	-0.907	-0.831	-0.945	-0.670	-0.908

Countries are reported based on ascending per capita real income levels.

[a]As the estimated budget shares for medical and health, recreation, and "other" were negative, these values are calculated using the actual budget shares. Calculated using equation (6).

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

Slutsky own-price elasticities for aggregate consumption categories, 144 countries, 2005

	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
Low-income countries:									
Congo, Dem. Rep.	-0.230	-0.669	-0.690	-0.741	-1.089[a]	-0.933	-2.743[a]	-0.664	-1.496[a]
Burundi	-0.268	-0.669	-0.682	-0.738	-1.089[a]	-0.869	-1.294[a]	-0.663	-1.110[a]
Liberia	-0.275	-0.669	-0.680	-0.738	-6.178	-0.859	-1.772[a]	-0.663	-7.980
Zimbabwe	-0.285	-0.669	-0.678	-0.737	-3.061	-0.846	-1.427[a]	-0.663	-3.312
Ethiopia	-0.293	-0.669	-0.676	-0.736	-2.332	-0.836	-3.839[a]	-0.662	-2.433
Niger	-0.293	-0.669	-0.676	-0.736	-2.292	-0.836	-1.003[a]	-0.662	-2.386
Guinea-Bissau	-0.294	-0.669	-0.676	-0.736	-2.259	-0.835	-1.137[a]	-0.662	-2.349
Mozambique	-0.301	-0.669	-0.674	-0.736	-1.891	-0.826	-1.510[a]	-0.662	-1.931
Malawi	-0.307	-0.669	-0.673	-0.735	-1.717	-0.819	-0.868[a]	-0.662	-1.739
Rwanda	-0.309	-0.669	-0.672	-0.735	-1.666	-0.817	-2.168[a]	-0.662	-1.683
Angola	-0.314	-0.669	-0.671	-0.735	-1.541	-0.811	-9.304	-0.662	-1.547
Chad	-0.315	-0.670	-0.671	-0.734	-1.525	-0.810	-7.907	-0.662	-1.530
Gambia, The	-0.316	-0.670	-0.671	-0.734	-1.505	-0.809	-6.680	-0.662	-1.509
Central African Republic	-0.317	-0.670	-0.671	-0.734	-1.496	-0.808	-6.199	-0.662	-1.498
Mali	-0.317	-0.670	-0.670	-0.734	-1.494	-0.808	-6.132	-0.662	-1.497
Tanzania	-0.318	-0.670	-0.670	-0.734	-1.475	-0.807	-5.353	-0.662	-1.476
Sierra Leone	-0.321	-0.670	-0.670	-0.734	-1.431	-0.804	-4.147	-0.662	-1.428
Guinea	-0.321	-0.670	-0.669	-0.734	-1.423	-0.803	-3.994	-0.662	-1.421
Burkina Faso	-0.323	-0.670	-0.669	-0.734	-1.398	-0.801	-3.538	-0.662	-1.393
Uganda	-0.326	-0.670	-0.668	-0.733	-1.347	-0.797	-2.869	-0.661	-1.339
Madagascar	-0.327	-0.670	-0.668	-0.733	-1.344	-0.797	-2.841	-0.661	-1.336
Zambia	-0.327	-0.670	-0.668	-0.733	-1.340	-0.797	-2.804	-0.661	-1.332
Congo, Rep.	-0.328	-0.670	-0.668	-0.733	-1.324	-0.795	-2.641	-0.661	-1.314
Togo	-0.329	-0.670	-0.667	-0.733	-1.312	-0.794	-2.538	-0.661	-1.302
Nepal	-0.333	-0.670	-0.666	-0.733	-1.275	-0.790	-2.250	-0.661	-1.263
Ghana	-0.334	-0.670	-0.666	-0.733	-1.257	-0.788	-2.130	-0.661	-1.243
Benin	-0.337	-0.670	-0.665	-0.732	-1.231	-0.785	-1.980	-0.661	-1.216
Mauritania	-0.337	-0.670	-0.665	-0.732	-1.227	-0.785	-1.961	-0.661	-1.212
Bangladesh	-0.339	-0.670	-0.665	-0.732	-1.215	-0.784	-1.896	-0.661	-1.199
Côte d'Ivoire	-0.339	-0.670	-0.665	-0.732	-1.212	-0.783	-1.878	-0.661	-1.196
Lao PDR	-0.339	-0.670	-0.665	-0.732	-1.210	-0.783	-1.873	-0.661	-1.195
Kenya	-0.343	-0.670	-0.664	-0.732	-1.179	-0.779	-1.727	-0.661	-1.161
Djibouti	-0.343	-0.670	-0.664	-0.732	-1.177	-0.779	-1.719	-0.661	-1.159
Nigeria	-0.344	-0.670	-0.663	-0.732	-1.171	-0.778	-1.691	-0.661	-1.152
Senegal	-0.344	-0.670	-0.663	-0.732	-1.169	-0.778	-1.685	-0.661	-1.151
Cambodia	-0.347	-0.670	-0.663	-0.732	-1.148	-0.774	-1.600	-0.661	-1.128
Cameroon	-0.349	-0.670	-0.662	-0.731	-1.131	-0.772	-1.541	-0.661	-1.111
São Tomé and Principe	-0.350	-0.670	-0.662	-0.731	-1.126	-0.771	-1.521	-0.661	-1.105

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Slutsky own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
India	-0.351	-0.670	-0.661	-0.731	-1.116	-0.770	-1.488	-0.660	-1.095
Yemen, Rep.	-0.352	-0.670	-0.661	-0.731	-1.112	-0.769	-1.476	-0.660	-1.091
Vietnam	-0.352	-0.670	-0.661	-0.731	-1.112	-0.769	-1.474	-0.660	-1.090
Mongolia	-0.353	-0.670	-0.661	-0.731	-1.108	-0.768	-1.462	-0.660	-1.086
Iraq	-0.354	-0.670	-0.660	-0.731	-1.098	-0.766	-1.428	-0.660	-1.075
Bhutan	-0.355	-0.670	-0.660	-0.731	-1.089	-0.765	-1.402	-0.660	-1.066
China	-0.357	-0.670	-0.660	-0.731	-1.081	-0.763	-1.378	-0.660	-1.058
Sudan	-0.360	-0.670	-0.659	-0.730	-1.063	-0.760	-1.326	-0.660	-1.038
Lesotho	-0.361	-0.670	-0.658	-0.730	-1.053	-0.758	-1.299	-0.660	-1.028
Tajikistan	-0.361	-0.670	-0.658	-0.730	-1.052	-0.758	-1.297	-0.660	-1.027
Maldives	-0.365	-0.670	-0.657	-0.730	-1.031	-0.753	-1.242	-0.660	-1.004
Morocco	-0.366	-0.670	-0.657	-0.730	-1.027	-0.753	-1.234	-0.660	-1.001
Pakistan	-0.367	-0.670	-0.656	-0.729	-1.022	-0.751	-1.220	-0.660	-0.995
Indonesia	-0.368	-0.670	-0.656	-0.729	-1.013	-0.749	-1.199	-0.660	-0.985
Kyrgyz Republic	-0.368	-0.670	-0.656	-0.729	-1.012	-0.749	-1.199	-0.660	-0.985
Philippines	-0.369	-0.670	-0.656	-0.729	-1.010	-0.749	-1.193	-0.659	-0.982
Cape Verde	-0.369	-0.670	-0.656	-0.729	-1.009	-0.749	-1.191	-0.659	-0.982
Bolivia	-0.369	-0.670	-0.655	-0.729	-1.008	-0.748	-1.188	-0.659	-0.980
Namibia	-0.371	-0.670	-0.655	-0.729	-0.997	-0.746	-1.163	-0.659	-0.968
Sri Lanka	-0.372	-0.670	-0.654	-0.729	-0.992	-0.744	-1.152	-0.659	-0.963
Botswana	-0.373	-0.670	-0.654	-0.729	-0.989	-0.744	-1.145	-0.659	-0.960
Gabon	-0.373	-0.670	-0.654	-0.728	-0.984	-0.743	-1.136	-0.659	-0.955
Azerbaijan	-0.374	-0.670	-0.654	-0.728	-0.983	-0.742	-1.133	-0.659	-0.954
Syrian Arab Republic	-0.374	-0.670	-0.653	-0.728	-0.980	-0.741	-1.126	-0.659	-0.951
Equatorial Guinea	-0.376	-0.670	-0.653	-0.728	-0.968	-0.738	-1.102	-0.659	-0.938
Paraguay	-0.377	-0.670	-0.652	-0.728	-0.965	-0.737	-1.094	-0.659	-0.934
Fiji	-0.378	-0.670	-0.652	-0.728	-0.960	-0.736	-1.085	-0.659	-0.929
Swaziland	-0.378	-0.670	-0.651	-0.728	-0.955	-0.734	-1.074	-0.659	-0.923
Moldova	-0.379	-0.670	-0.651	-0.728	-0.952	-0.734	-1.070	-0.659	-0.921
Egypt, Arab Rep.	-0.379	-0.671	-0.651	-0.727	-0.949	-0.733	-1.064	-0.659	-0.918
Ecuador	-0.380	-0.671	-0.650	-0.727	-0.943	-0.731	-1.052	-0.658	-0.911
Jordan	-0.380	-0.671	-0.650	-0.727	-0.942	-0.731	-1.050	-0.658	-0.910
Georgia	-0.381	-0.671	-0.650	-0.727	-0.940	-0.730	-1.047	-0.658	-0.908
Thailand	-0.381	-0.671	-0.650	-0.727	-0.938	-0.730	-1.043	-0.658	-0.906
Colombia	-0.381	-0.671	-0.650	-0.727	-0.937	-0.729	-1.040	-0.658	-0.904
Albania	-0.381	-0.671	-0.649	-0.727	-0.934	-0.728	-1.035	-0.658	-0.901
Tunisia	-0.382	-0.671	-0.649	-0.727	-0.932	-0.728	-1.031	-0.658	-0.899
Peru	-0.382	-0.671	-0.649	-0.727	-0.928	-0.726	-1.024	-0.658	-0.895
Armenia	-0.383	-0.671	-0.648	-0.727	-0.925	-0.725	-1.018	-0.658	-0.892

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Slutsky own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
Middle-income countries:									
Venezuela, RB	-0.383	-0.671	-0.648	-0.726	-0.917	-0.723	-1.004	-0.658	-0.883
Malaysia	-0.383	-0.671	-0.648	-0.726	-0.917	-0.723	-1.004	-0.658	-0.883
Ukraine	-0.384	-0.671	-0.647	-0.726	-0.915	-0.722	-1.001	-0.658	-0.881
Brazil	-0.384	-0.671	-0.647	-0.726	-0.913	-0.721	-0.997	-0.658	-0.879
Montenegro	-0.384	-0.671	-0.647	-0.726	-0.911	-0.721	-0.994	-0.658	-0.877
South Africa	-0.384	-0.671	-0.646	-0.726	-0.906	-0.719	-0.985	-0.658	-0.871
Macedonia, FYR	-0.384	-0.671	-0.646	-0.726	-0.900	-0.717	-0.974	-0.657	-0.864
Turkey	-0.384	-0.671	-0.646	-0.726	-0.899	-0.716	-0.972	-0.657	-0.863
Bosnia and Herzegovina	-0.384	-0.671	-0.645	-0.725	-0.893	-0.714	-0.963	-0.657	-0.857
Serbia	-0.384	-0.671	-0.645	-0.725	-0.892	-0.714	-0.960	-0.657	-0.855
Belarus	-0.384	-0.671	-0.645	-0.725	-0.891	-0.714	-0.960	-0.657	-0.855
Romania	-0.384	-0.671	-0.645	-0.725	-0.890	-0.713	-0.957	-0.657	-0.854
Saudi Arabia	-0.384	-0.671	-0.644	-0.725	-0.889	-0.713	-0.956	-0.657	-0.853
Uruguay	-0.384	-0.671	-0.644	-0.725	-0.888	-0.712	-0.954	-0.657	-0.852
Mauritius	-0.384	-0.671	-0.644	-0.725	-0.888	-0.712	-0.954	-0.657	-0.852
Chile	-0.384	-0.671	-0.644	-0.725	-0.887	-0.712	-0.953	-0.657	-0.851
Kazakhstan	-0.384	-0.671	-0.644	-0.725	-0.885	-0.711	-0.949	-0.657	-0.848
Russian Federation	-0.384	-0.671	-0.643	-0.725	-0.882	-0.710	-0.943	-0.657	-0.844
Argentina	-0.384	-0.671	-0.643	-0.725	-0.880	-0.709	-0.941	-0.657	-0.843
Bulgaria	-0.383	-0.671	-0.643	-0.725	-0.878	-0.709	-0.938	-0.657	-0.841
Oman	-0.383	-0.671	-0.643	-0.725	-0.876	-0.708	-0.934	-0.657	-0.838
Iran, Islamic Rep.	-0.382	-0.671	-0.642	-0.724	-0.871	-0.706	-0.925	-0.656	-0.832
Latvia	-0.381	-0.671	-0.641	-0.724	-0.865	-0.703	-0.916	-0.656	-0.826
Mexico	-0.380	-0.671	-0.641	-0.724	-0.864	-0.703	-0.914	-0.656	-0.825
Lebanon	-0.380	-0.671	-0.641	-0.724	-0.861	-0.702	-0.910	-0.656	-0.822
Poland	-0.377	-0.671	-0.639	-0.724	-0.854	-0.698	-0.899	-0.656	-0.814
Croatia	-0.376	-0.671	-0.639	-0.724	-0.853	-0.698	-0.898	-0.656	-0.813
Macao, China	-0.376	-0.671	-0.639	-0.724	-0.853	-0.698	-0.897	-0.656	-0.813
Lithuania	-0.376	-0.671	-0.639	-0.724	-0.853	-0.698	-0.897	-0.656	-0.812
Estonia	-0.375	-0.671	-0.639	-0.723	-0.850	-0.697	-0.893	-0.656	-0.809
Brunei Darussalam	-0.373	-0.671	-0.638	-0.723	-0.847	-0.695	-0.888	-0.655	-0.806
Slovak Republic	-0.372	-0.671	-0.638	-0.723	-0.846	-0.695	-0.887	-0.655	-0.805
Hungary	-0.372	-0.671	-0.638	-0.723	-0.845	-0.695	-0.886	-0.655	-0.804
Korea, Rep.	-0.369	-0.671	-0.637	-0.723	-0.840	-0.692	-0.879	-0.655	-0.799
Bahrain	-0.369	-0.671	-0.637	-0.723	-0.840	-0.692	-0.879	-0.655	-0.799
Czech Republic	-0.363	-0.671	-0.636	-0.722	-0.834	-0.689	-0.869	-0.655	-0.792
Slovenia	-0.360	-0.671	-0.636	-0.722	-0.831	-0.688	-0.865	-0.655	-0.789
Israel	-0.359	-0.671	-0.636	-0.722	-0.830	-0.688	-0.863	-0.655	-0.787

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Slutsky own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
High-income countries:									
Portugal	-0.356	-0.671	-0.635	-0.722	-0.827	-0.686	-0.859	-0.654	-0.784
Qatar	-0.355	-0.671	-0.635	-0.722	-0.826	-0.686	-0.858	-0.654	-0.783
Singapore	-0.354	-0.671	-0.635	-0.722	-0.826	-0.685	-0.857	-0.654	-0.782
Malta	-0.350	-0.671	-0.634	-0.722	-0.823	-0.684	-0.853	-0.654	-0.780
Kuwait	-0.349	-0.671	-0.634	-0.722	-0.822	-0.684	-0.852	-0.654	-0.779
New Zealand	-0.341	-0.671	-0.633	-0.721	-0.817	-0.681	-0.845	-0.654	-0.773
Finland	-0.339	-0.671	-0.633	-0.721	-0.816	-0.681	-0.843	-0.654	-0.772
Taiwan, China	-0.338	-0.671	-0.633	-0.721	-0.816	-0.680	-0.842	-0.654	-0.771
Spain	-0.335	-0.671	-0.633	-0.721	-0.814	-0.680	-0.840	-0.654	-0.769
Italy	-0.333	-0.671	-0.633	-0.721	-0.813	-0.679	-0.839	-0.654	-0.769
Ireland	-0.331	-0.671	-0.632	-0.721	-0.812	-0.679	-0.837	-0.654	-0.767
Denmark	-0.331	-0.671	-0.632	-0.721	-0.812	-0.679	-0.837	-0.654	-0.767
Sweden	-0.329	-0.671	-0.632	-0.721	-0.811	-0.678	-0.835	-0.653	-0.766
Hong Kong, China	-0.328	-0.671	-0.632	-0.721	-0.811	-0.678	-0.835	-0.653	-0.765
Australia	-0.325	-0.671	-0.632	-0.721	-0.809	-0.677	-0.833	-0.653	-0.764
Cyprus	-0.324	-0.671	-0.632	-0.721	-0.809	-0.677	-0.833	-0.653	-0.764
Belgium	-0.324	-0.671	-0.632	-0.721	-0.809	-0.677	-0.832	-0.653	-0.763
Japan	-0.323	-0.671	-0.632	-0.721	-0.809	-0.677	-0.832	-0.653	-0.763
France	-0.321	-0.671	-0.631	-0.721	-0.808	-0.676	-0.831	-0.653	-0.762
Germany	-0.316	-0.671	-0.631	-0.721	-0.806	-0.675	-0.828	-0.653	-0.760
Canada	-0.315	-0.671	-0.631	-0.721	-0.806	-0.675	-0.828	-0.653	-0.760
Iceland	-0.314	-0.671	-0.631	-0.721	-0.805	-0.675	-0.827	-0.653	-0.759
Netherlands	-0.313	-0.671	-0.631	-0.721	-0.805	-0.675	-0.827	-0.653	-0.759
Norway	-0.313	-0.671	-0.631	-0.721	-0.805	-0.675	-0.827	-0.653	-0.759
United Kingdom	-0.307	-0.671	-0.630	-0.720	-0.803	-0.674	-0.824	-0.653	-0.757
Switzerland	-0.306	-0.671	-0.630	-0.720	-0.802	-0.673	-0.823	-0.653	-0.756
Austria	-0.301	-0.671	-0.630	-0.720	-0.801	-0.672	-0.821	-0.653	-0.754
Luxembourg	-0.264	-0.672	-0.628	-0.720	-0.791	-0.667	-0.808	-0.652	-0.743
United States	-0.239	-0.672	-0.627	-0.719	-0.786	-0.664	-0.801	-0.652	-0.738
Low-Income average	-0.345	-0.670	-0.662	-0.731	-1.290	-0.776	-2.033	-0.660	-1.310
Middle-Income average	-0.379	-0.671	-0.642	-0.725	-0.875	-0.707	-0.933	-0.656	-0.837
High-Income average	-0.323	-0.671	-0.632	-0.721	-0.810	-0.678	-0.835	-0.653	-0.765

Countries are reported based on ascending per capita real income levels.

[a]As the estimated budget shares for medical and health, recreation, and "other" were negative, these values are calculated using the actual budget shares. Calculated using equation (7).

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

Appendix table 4

Cournot own-price elasticities for aggregate consumption categories, 144 countries, 2005.

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
Low-income countries:									
Congo, Dem. Rep.	-0.863	-0.729	-0.826	-0.789	-1.145[a]	-1.012	-2.778[a]	-0.701	-1.552[a]
Burundi	-0.832	-0.728	-0.824	-0.788	-1.145[a]	-0.962	-1.350[a]	-0.698	-1.187[a]
Liberia	-0.826	-0.728	-0.824	-0.788	-6.201	-0.955	-1.815[a]	-0.698	-8.013
Zimbabwe	-0.818	-0.727	-0.823	-0.788	-3.087	-0.945	-1.478[a]	-0.697	-3.350
Ethiopia	-0.810	-0.727	-0.823	-0.787	-2.361	-0.939	-3.871[a]	-0.697	-2.475
Niger	-0.810	-0.727	-0.823	-0.787	-2.321	-0.938	-1.082[a]	-0.697	-2.429
Guinea-Bissau	-0.809	-0.727	-0.823	-0.787	-2.289	-0.938	-1.203[a]	-0.697	-2.392
Mozambique	-0.802	-0.727	-0.823	-0.787	-1.924	-0.932	-1.558[a]	-0.696	-1.978
Malawi	-0.796	-0.727	-0.823	-0.787	-1.752	-0.927	-0.975[a]	-0.696	-1.789
Rwanda	-0.794	-0.727	-0.823	-0.787	-1.701	-0.926	-2.206[a]	-0.696	-1.735
Angola	-0.788	-0.727	-0.823	-0.787	-1.578	-0.922	-9.332	-0.695	-1.602
Chad	-0.787	-0.727	-0.823	-0.787	-1.563	-0.921	-7.936	-0.695	-1.585
Gambia, The	-0.786	-0.727	-0.823	-0.787	-1.544	-0.921	-6.709	-0.695	-1.565
Central African Republic	-0.786	-0.727	-0.823	-0.787	-1.534	-0.920	-6.229	-0.695	-1.555
Mali	-0.785	-0.727	-0.823	-0.787	-1.533	-0.920	-6.162	-0.695	-1.553
Tanzania	-0.784	-0.727	-0.822	-0.787	-1.514	-0.919	-5.383	-0.695	-1.533
Sierra Leone	-0.781	-0.727	-0.822	-0.786	-1.471	-0.918	-4.178	-0.695	-1.487
Guinea	-0.781	-0.727	-0.822	-0.786	-1.463	-0.917	-4.026	-0.695	-1.480
Burkina Faso	-0.779	-0.727	-0.822	-0.786	-1.439	-0.916	-3.571	-0.695	-1.453
Uganda	-0.774	-0.726	-0.822	-0.786	-1.389	-0.914	-2.904	-0.694	-1.401
Madagascar	-0.774	-0.726	-0.822	-0.786	-1.386	-0.913	-2.876	-0.694	-1.398
Zambia	-0.773	-0.726	-0.822	-0.786	-1.383	-0.913	-2.839	-0.694	-1.395
Congo, Rep.	-0.772	-0.726	-0.822	-0.786	-1.367	-0.912	-2.677	-0.694	-1.378
Togo	-0.770	-0.726	-0.822	-0.786	-1.356	-0.912	-2.574	-0.694	-1.366
Nepal	-0.766	-0.726	-0.822	-0.786	-1.320	-0.910	-2.288	-0.694	-1.329
Ghana	-0.764	-0.726	-0.822	-0.786	-1.302	-0.908	-2.169	-0.694	-1.311
Benin	-0.760	-0.726	-0.822	-0.786	-1.278	-0.907	-2.021	-0.693	-1.285
Mauritania	-0.760	-0.726	-0.822	-0.786	-1.275	-0.907	-2.002	-0.693	-1.282
Bangladesh	-0.758	-0.726	-0.822	-0.786	-1.263	-0.906	-1.937	-0.693	-1.270
Côte d'Ivoire	-0.757	-0.726	-0.822	-0.786	-1.260	-0.905	-1.920	-0.693	-1.266
Lao PDR	-0.757	-0.726	-0.822	-0.786	-1.259	-0.905	-1.915	-0.693	-1.265
Kenya	-0.752	-0.726	-0.822	-0.786	-1.229	-0.903	-1.771	-0.693	-1.234
Djibouti	-0.752	-0.726	-0.822	-0.786	-1.227	-0.903	-1.763	-0.693	-1.232
Nigeria	-0.750	-0.726	-0.822	-0.786	-1.221	-0.903	-1.736	-0.693	-1.226
Senegal	-0.750	-0.726	-0.822	-0.786	-1.219	-0.902	-1.730	-0.693	-1.225
Cambodia	-0.746	-0.726	-0.822	-0.786	-1.199	-0.901	-1.647	-0.692	-1.204
Cameroon	-0.742	-0.726	-0.822	-0.786	-1.184	-0.899	-1.588	-0.692	-1.188
São Tomé and Principe	-0.741	-0.726	-0.822	-0.786	-1.179	-0.899	-1.569	-0.692	-1.183

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Cournot own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
India	-0.739	-0.726	-0.822	-0.785	-1.170	-0.898	-1.537	-0.692	-1.174
Yemen, Rep.	-0.738	-0.726	-0.822	-0.785	-1.166	-0.898	-1.525	-0.692	-1.170
Vietnam	-0.738	-0.726	-0.822	-0.785	-1.166	-0.898	-1.523	-0.692	-1.170
Mongolia	-0.737	-0.726	-0.822	-0.785	-1.162	-0.897	-1.512	-0.692	-1.166
Iraq	-0.734	-0.726	-0.822	-0.785	-1.153	-0.897	-1.479	-0.692	-1.156
Bhutan	-0.732	-0.726	-0.821	-0.785	-1.145	-0.896	-1.454	-0.691	-1.148
China	-0.730	-0.726	-0.821	-0.785	-1.138	-0.895	-1.431	-0.691	-1.141
Sudan	-0.724	-0.725	-0.821	-0.785	-1.121	-0.893	-1.381	-0.691	-1.124
Lesotho	-0.721	-0.725	-0.821	-0.785	-1.112	-0.892	-1.355	-0.691	-1.115
Tajikistan	-0.721	-0.725	-0.821	-0.785	-1.111	-0.892	-1.353	-0.691	-1.114
Maldives	-0.713	-0.725	-0.821	-0.785	-1.092	-0.890	-1.301	-0.690	-1.095
Morocco	-0.712	-0.725	-0.821	-0.785	-1.089	-0.890	-1.293	-0.690	-1.092
Pakistan	-0.709	-0.725	-0.821	-0.785	-1.084	-0.889	-1.280	-0.690	-1.087
Indonesia	-0.705	-0.725	-0.821	-0.785	-1.076	-0.888	-1.261	-0.690	-1.079
Kyrgyz Republic	-0.705	-0.725	-0.821	-0.785	-1.076	-0.888	-1.260	-0.690	-1.078
Philippines	-0.704	-0.725	-0.821	-0.785	-1.073	-0.888	-1.254	-0.690	-1.076
Cape Verde	-0.704	-0.725	-0.821	-0.785	-1.073	-0.888	-1.253	-0.690	-1.076
Bolivia	-0.703	-0.725	-0.821	-0.785	-1.072	-0.888	-1.250	-0.690	-1.074
Namibia	-0.698	-0.725	-0.821	-0.785	-1.062	-0.886	-1.226	-0.689	-1.064
Sri Lanka	-0.696	-0.725	-0.821	-0.785	-1.058	-0.886	-1.217	-0.689	-1.060
Botswana	-0.694	-0.725	-0.821	-0.785	-1.055	-0.885	-1.210	-0.689	-1.058
Gabon	-0.692	-0.725	-0.821	-0.785	-1.051	-0.885	-1.202	-0.689	-1.054
Azerbaijan	-0.691	-0.725	-0.821	-0.785	-1.050	-0.885	-1.199	-0.689	-1.052
Syrian Arab Republic	-0.690	-0.725	-0.821	-0.785	-1.047	-0.884	-1.193	-0.689	-1.050
Equatorial Guinea	-0.683	-0.725	-0.821	-0.784	-1.037	-0.883	-1.171	-0.689	-1.040
Paraguay	-0.681	-0.725	-0.821	-0.784	-1.034	-0.883	-1.164	-0.688	-1.037
Fiji	-0.678	-0.725	-0.821	-0.784	-1.030	-0.882	-1.155	-0.688	-1.033
Swaziland	-0.674	-0.725	-0.821	-0.784	-1.026	-0.881	-1.146	-0.688	-1.028
Moldova	-0.673	-0.725	-0.821	-0.784	-1.024	-0.881	-1.142	-0.688	-1.026
Egypt, Arab Rep.	-0.671	-0.725	-0.821	-0.784	-1.021	-0.881	-1.137	-0.688	-1.024
Ecuador	-0.666	-0.724	-0.821	-0.784	-1.016	-0.880	-1.125	-0.688	-1.018
Jordan	-0.665	-0.724	-0.821	-0.784	-1.015	-0.880	-1.124	-0.688	-1.018
Georgia	-0.664	-0.724	-0.821	-0.784	-1.014	-0.880	-1.121	-0.688	-1.017
Thailand	-0.663	-0.724	-0.821	-0.784	-1.012	-0.879	-1.118	-0.687	-1.015
Colombia	-0.661	-0.724	-0.821	-0.784	-1.011	-0.879	-1.115	-0.687	-1.014
Albania	-0.659	-0.724	-0.821	-0.784	-1.009	-0.879	-1.111	-0.687	-1.011
Tunisia	-0.658	-0.724	-0.821	-0.784	-1.007	-0.879	-1.107	-0.687	-1.010
Peru	-0.655	-0.724	-0.821	-0.784	-1.004	-0.878	-1.101	-0.687	-1.007
Armenia	-0.652	-0.724	-0.821	-0.784	-1.001	-0.878	-1.096	-0.687	-1.004

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Cournot own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
Middle-income countries:									
Venezuela, RB	-0.645	-0.724	-0.821	-0.784	-0.995	-0.877	-1.084	-0.687	-0.998
Malaysia	-0.645	-0.724	-0.821	-0.784	-0.995	-0.877	-1.084	-0.687	-0.998
Ukraine	-0.643	-0.724	-0.821	-0.784	-0.993	-0.877	-1.081	-0.686	-0.996
Brazil	-0.641	-0.724	-0.821	-0.784	-0.991	-0.876	-1.077	-0.686	-0.994
Montenegro	-0.639	-0.724	-0.821	-0.784	-0.990	-0.876	-1.075	-0.686	-0.993
South Africa	-0.634	-0.724	-0.821	-0.784	-0.986	-0.875	-1.068	-0.686	-0.989
Macedonia, FYR	-0.627	-0.724	-0.821	-0.784	-0.981	-0.874	-1.058	-0.686	-0.984
Turkey	-0.626	-0.724	-0.821	-0.784	-0.980	-0.874	-1.056	-0.686	-0.983
Bosnia and Herzegovina	-0.619	-0.724	-0.821	-0.784	-0.976	-0.874	-1.049	-0.685	-0.979
Serbia	-0.618	-0.724	-0.821	-0.784	-0.974	-0.873	-1.046	-0.685	-0.978
Belarus	-0.617	-0.724	-0.821	-0.784	-0.974	-0.873	-1.046	-0.685	-0.978
Romania	-0.616	-0.724	-0.821	-0.784	-0.973	-0.873	-1.044	-0.685	-0.977
Saudi Arabia	-0.615	-0.724	-0.821	-0.784	-0.973	-0.873	-1.043	-0.685	-0.976
Uruguay	-0.613	-0.724	-0.821	-0.784	-0.972	-0.873	-1.041	-0.685	-0.975
Mauritius	-0.613	-0.724	-0.821	-0.784	-0.972	-0.873	-1.041	-0.685	-0.975
Chile	-0.612	-0.724	-0.821	-0.784	-0.971	-0.873	-1.041	-0.685	-0.975
Kazakhstan	-0.609	-0.724	-0.821	-0.784	-0.969	-0.873	-1.037	-0.685	-0.973
Russian Federation	-0.605	-0.724	-0.821	-0.784	-0.967	-0.872	-1.033	-0.685	-0.970
Argentina	-0.603	-0.724	-0.821	-0.784	-0.966	-0.872	-1.031	-0.685	-0.969
Bulgaria	-0.600	-0.724	-0.821	-0.784	-0.964	-0.872	-1.029	-0.684	-0.968
Oman	-0.597	-0.724	-0.821	-0.783	-0.962	-0.871	-1.025	-0.684	-0.966
Iran, Islamic Rep.	-0.589	-0.723	-0.821	-0.783	-0.958	-0.871	-1.018	-0.684	-0.962
Latvia	-0.580	-0.723	-0.821	-0.783	-0.954	-0.870	-1.011	-0.684	-0.958
Mexico	-0.577	-0.723	-0.821	-0.783	-0.953	-0.870	-1.010	-0.683	-0.957
Lebanon	-0.573	-0.723	-0.821	-0.783	-0.951	-0.869	-1.007	-0.683	-0.956
Poland	-0.559	-0.723	-0.821	-0.783	-0.946	-0.868	-0.997	-0.683	-0.950
Croatia	-0.558	-0.723	-0.821	-0.783	-0.946	-0.868	-0.997	-0.683	-0.950
Macao, China	-0.557	-0.723	-0.821	-0.783	-0.945	-0.868	-0.996	-0.683	-0.950
Lithuania	-0.557	-0.723	-0.821	-0.783	-0.945	-0.868	-0.996	-0.683	-0.950
Estonia	-0.551	-0.723	-0.821	-0.783	-0.943	-0.868	-0.993	-0.682	-0.948
Brunei Darussalam	-0.544	-0.723	-0.821	-0.783	-0.941	-0.867	-0.989	-0.682	-0.946
Slovak Republic	-0.543	-0.723	-0.821	-0.783	-0.940	-0.867	-0.988	-0.682	-0.945
Hungary	-0.542	-0.723	-0.821	-0.783	-0.940	-0.867	-0.988	-0.682	-0.945
Korea, Rep.	-0.531	-0.723	-0.821	-0.783	-0.937	-0.867	-0.982	-0.682	-0.941
Bahrain	-0.530	-0.723	-0.821	-0.783	-0.937	-0.867	-0.982	-0.682	-0.941
Czech Republic	-0.514	-0.723	-0.821	-0.783	-0.932	-0.866	-0.975	-0.681	-0.937
Slovenia	-0.506	-0.723	-0.821	-0.783	-0.930	-0.865	-0.972	-0.681	-0.935
Israel	-0.503	-0.723	-0.821	-0.783	-0.930	-0.865	-0.971	-0.681	-0.935

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Cournot own-price elasticities for aggregate consumption categories, 144 countries, 2005, *continued*

Country	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
High-income countries:									
Portugal	-0.496	-0.723	-0.821	-0.783	-0.928	-0.865	-0.968	-0.680	-0.933
Qatar	-0.492	-0.723	-0.821	-0.783	-0.927	-0.865	-0.967	-0.680	-0.932
Singapore	-0.490	-0.723	-0.821	-0.783	-0.927	-0.865	-0.966	-0.680	-0.932
Malta	-0.482	-0.722	-0.821	-0.783	-0.925	-0.864	-0.964	-0.680	-0.930
Kuwait	-0.480	-0.722	-0.821	-0.783	-0.924	-0.864	-0.963	-0.680	-0.930
New Zealand	-0.463	-0.722	-0.821	-0.783	-0.921	-0.864	-0.958	-0.679	-0.927
Finland	-0.459	-0.722	-0.821	-0.783	-0.921	-0.863	-0.957	-0.679	-0.926
Taiwan, China	-0.457	-0.722	-0.821	-0.783	-0.920	-0.863	-0.957	-0.679	-0.926
Spain	-0.451	-0.722	-0.821	-0.783	-0.919	-0.863	-0.955	-0.679	-0.925
Italy	-0.447	-0.722	-0.821	-0.783	-0.919	-0.863	-0.954	-0.679	-0.924
Ireland	-0.443	-0.722	-0.821	-0.783	-0.918	-0.863	-0.953	-0.679	-0.924
Denmark	-0.442	-0.722	-0.821	-0.783	-0.918	-0.863	-0.953	-0.679	-0.924
Sweden	-0.438	-0.722	-0.821	-0.783	-0.917	-0.863	-0.952	-0.679	-0.923
Hong Kong, China	-0.436	-0.722	-0.821	-0.783	-0.917	-0.863	-0.952	-0.679	-0.923
Australia	-0.431	-0.722	-0.821	-0.783	-0.916	-0.863	-0.950	-0.679	-0.922
Cyprus	-0.430	-0.722	-0.821	-0.783	-0.916	-0.862	-0.950	-0.679	-0.922
Belgium	-0.428	-0.722	-0.821	-0.783	-0.916	-0.862	-0.950	-0.679	-0.922
Japan	-0.428	-0.722	-0.821	-0.783	-0.916	-0.862	-0.950	-0.679	-0.922
France	-0.423	-0.722	-0.821	-0.782	-0.915	-0.862	-0.949	-0.678	-0.921
Germany	-0.414	-0.722	-0.821	-0.782	-0.914	-0.862	-0.947	-0.678	-0.920
Canada	-0.414	-0.722	-0.821	-0.782	-0.914	-0.862	-0.947	-0.678	-0.920
Iceland	-0.411	-0.722	-0.821	-0.782	-0.913	-0.862	-0.946	-0.678	-0.920
Netherlands	-0.411	-0.722	-0.821	-0.782	-0.913	-0.862	-0.946	-0.678	-0.920
Norway	-0.410	-0.722	-0.821	-0.782	-0.913	-0.862	-0.946	-0.678	-0.919
United Kingdom	-0.400	-0.722	-0.821	-0.782	-0.912	-0.862	-0.944	-0.678	-0.918
Switzerland	-0.398	-0.722	-0.821	-0.782	-0.912	-0.862	-0.944	-0.678	-0.918
Austria	-0.389	-0.722	-0.821	-0.782	-0.911	-0.861	-0.942	-0.678	-0.917
Luxembourg	-0.332	-0.722	-0.821	-0.782	-0.905	-0.860	-0.934	-0.676	-0.912
United States	-0.297	-0.721	-0.821	-0.782	-0.902	-0.860	-0.930	-0.676	-0.909
Low-income average	-0.737	-0.726	-0.822	-0.786	-1.344	-0.903	-2.086	-0.692	-1.389
Middle-income average	-0.588	-0.723	-0.821	-0.783	-0.962	-0.871	-1.025	-0.684	-0.966
High-income average	-0.431	-0.722	-0.821	-0.783	-0.917	-0.863	-0.952	-0.679	-0.923

Countries are reported based on ascending per capita real income levels.

[a] As the estimated budget shares for medical and health, recreation, and other were negative, these values are calculated using the actual budget shares. Calculated using equation (8).

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

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Unconditional expenditure elasticities of demand for food subcategories, 144 countries, 2005

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Low-income countries:									
Congo, Dem. Rep.	0.014	0.685	0.846	0.751	0.877	0.691	0.728	1.373[a]	4.545
Burundi	0.020	0.661	0.832	0.733	0.861	0.668	0.709	1.413[a]	2.351
Liberia	0.013	0.673	0.828	0.736	0.858	0.679	0.715	2.100[a]	7.094
Zimbabwe	0.031	0.637	0.824	0.720	0.853	0.645	0.693	3.417	1.661
Ethiopia	0.040	0.622	0.820	0.713	0.848	0.631	0.684	2.275	1.488
Niger	0.037	0.626	0.819	0.714	0.848	0.635	0.686	2.546	1.539
Guinea-Bissau	0.040	0.621	0.819	0.712	0.848	0.630	0.683	2.261	1.485
Mozambique	0.055	0.600	0.815	0.703	0.843	0.611	0.671	1.745	1.346
Malawi	0.017	0.651	0.812	0.718	0.840	0.657	0.695	0.982[a]	2.846
Rwanda	0.060	0.591	0.810	0.698	0.839	0.603	0.665	1.649	1.309
Angola	0.051	0.599	0.807	0.698	0.835	0.610	0.667	1.817	1.360
Chad	0.050	0.600	0.806	0.698	0.834	0.610	0.667	1.842	1.367
Gambia, The	0.027	0.629	0.806	0.706	0.834	0.637	0.681	5.252	1.755
Central African Republic	0.068	0.580	0.805	0.691	0.833	0.592	0.657	1.549	1.268
Mali	0.060	0.588	0.805	0.694	0.833	0.599	0.661	1.644	1.303
Tanzania	0.085	0.563	0.804	0.687	0.832	0.577	0.650	1.424	1.216
Sierra Leone	0.044	0.603	0.802	0.696	0.831	0.613	0.667	2.011	1.408
Guinea	0.045	0.603	0.802	0.696	0.830	0.613	0.667	2.001	1.405
Burkina Faso	0.072	0.573	0.801	0.687	0.829	0.585	0.652	1.502	1.246
Uganda	0.062	0.581	0.798	0.687	0.826	0.592	0.654	1.605	1.283
Madagascar	0.069	0.574	0.798	0.685	0.826	0.586	0.651	1.525	1.253
Zambia	0.018	0.638	0.798	0.705	0.826	0.645	0.683	1.672	2.604
Congo, Rep.	0.070	0.572	0.797	0.684	0.824	0.584	0.650	1.516	1.248
Togo	0.075	0.567	0.796	0.682	0.823	0.580	0.647	1.476	1.232
Nepal	0.094	0.548	0.793	0.675	0.820	0.563	0.638	1.362	1.181
Ghana	0.061	0.577	0.792	0.682	0.819	0.588	0.649	1.599	1.275
Benin	0.077	0.560	0.789	0.676	0.817	0.573	0.641	1.448	1.215
Mauritania	0.105	0.536	0.789	0.669	0.816	0.551	0.631	1.314	1.155
Bangladesh	0.110	0.531	0.788	0.667	0.815	0.547	0.628	1.298	1.147
Côte d'Ivoire	0.095	0.543	0.787	0.670	0.814	0.558	0.633	1.349	1.171
Lao PDR	0.104	0.535	0.787	0.668	0.814	0.551	0.629	1.315	1.154
Kenya	0.074	0.559	0.784	0.672	0.811	0.571	0.638	1.457	1.215
Djibouti	0.123	0.518	0.783	0.661	0.810	0.535	0.620	1.257	1.123
Nigeria	0.092	0.542	0.783	0.667	0.810	0.557	0.630	1.352	1.169
Senegal	0.109	0.529	0.782	0.663	0.809	0.544	0.624	1.293	1.141
Cambodia	0.120	0.517	0.780	0.659	0.806	0.534	0.618	1.257	1.121
Cameroon	0.123	0.514	0.777	0.656	0.804	0.531	0.616	1.247	1.115
São Tomé and Principe	0.137	0.502	0.776	0.653	0.803	0.521	0.611	1.218	1.099

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Unconditional expenditure elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
India	0.094	0.535	0.775	0.660	0.801	0.550	0.623	1.332	1.154
Yemen, Rep.	0.119	0.515	0.774	0.654	0.801	0.532	0.614	1.252	1.115
Vietnam	0.091	0.537	0.774	0.659	0.801	0.551	0.623	1.343	1.159
Mongolia	0.120	0.513	0.773	0.653	0.800	0.530	0.613	1.247	1.112
Iraq	0.111	0.519	0.771	0.653	0.798	0.535	0.615	1.268	1.121
Bhutan	0.127	0.506	0.770	0.649	0.796	0.523	0.609	1.227	1.100
China	0.094	0.531	0.768	0.654	0.795	0.545	0.618	1.319	1.144
Sudan	0.154	0.483	0.764	0.640	0.790	0.502	0.597	1.173	1.068
Lesotho	0.092	0.528	0.762	0.649	0.788	0.542	0.613	1.317	1.138
Tajikistan	0.103	0.518	0.762	0.646	0.788	0.533	0.609	1.274	1.118
Maldives	0.116	0.505	0.756	0.639	0.782	0.521	0.601	1.229	1.092
Morocco	0.165	0.469	0.755	0.631	0.781	0.490	0.587	1.145	1.047
Pakistan	0.150	0.478	0.753	0.632	0.779	0.498	0.589	1.162	1.056
Indonesia	0.213	0.435	0.750	0.621	0.776	0.460	0.572	1.095	1.016
Kyrgyz Republic	0.149	0.477	0.750	0.629	0.776	0.496	0.587	1.159	1.052
Philippines	0.219	0.430	0.749	0.620	0.775	0.456	0.570	1.089	1.013
Cape Verde	0.167	0.464	0.749	0.626	0.775	0.485	0.582	1.134	1.038
Bolivia	0.163	0.467	0.749	0.626	0.774	0.487	0.583	1.139	1.041
Namibia	0.148	0.475	0.745	0.625	0.770	0.494	0.583	1.152	1.046
Sri Lanka	0.182	0.451	0.743	0.619	0.768	0.473	0.574	1.110	1.021
Botswana	0.137	0.480	0.742	0.624	0.767	0.498	0.584	1.164	1.050
Gabon	0.188	0.445	0.740	0.615	0.765	0.467	0.570	1.099	1.013
Azerbaijan	0.272	0.391	0.739	0.606	0.764	0.422	0.552	1.046	0.982
Syrian Arab Republic	0.257	0.400	0.738	0.606	0.763	0.429	0.554	1.052	0.984
Equatorial Guinea	0.204	0.430	0.733	0.608	0.758	0.454	0.561	1.076	0.996
Paraguay	0.267	0.390	0.731	0.599	0.756	0.419	0.547	1.036	0.972
Fiji	0.228	0.413	0.728	0.601	0.753	0.438	0.553	1.053	0.981
Swaziland	0.213	0.421	0.726	0.601	0.750	0.445	0.554	1.059	0.983
Moldova	0.153	0.458	0.724	0.607	0.749	0.477	0.566	1.113	1.013
Egypt, Arab Rep.	0.279	0.378	0.723	0.592	0.747	0.409	0.539	1.020	0.958
Ecuador	0.240	0.400	0.719	0.592	0.743	0.426	0.543	1.033	0.964
Jordan	0.294	0.367	0.718	0.587	0.743	0.399	0.533	1.008	0.948
Georgia	0.216	0.414	0.717	0.594	0.742	0.438	0.547	1.045	0.971
Thailand	0.234	0.402	0.716	0.591	0.740	0.428	0.542	1.032	0.962
Colombia	0.244	0.395	0.715	0.589	0.739	0.422	0.539	1.025	0.958
Albania	0.242	0.396	0.713	0.588	0.738	0.422	0.539	1.024	0.956
Tunisia	0.324	0.346	0.712	0.579	0.736	0.381	0.523	0.989	0.934
Peru	0.301	0.359	0.709	0.579	0.733	0.391	0.525	0.993	0.935
Armenia	0.374	0.314	0.707	0.571	0.731	0.353	0.512	0.968	0.918

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Unconditional expenditure elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Middle-income countries:									
Venezuela, RB	0.342	0.330	0.701	0.568	0.725	0.366	0.512	0.968	0.916
Malaysia	0.256	0.380	0.701	0.576	0.725	0.408	0.527	0.999	0.935
Ukraine	0.312	0.347	0.699	0.570	0.723	0.380	0.516	0.975	0.920
Brazil	0.281	0.364	0.697	0.571	0.721	0.393	0.520	0.983	0.924
Montenegro	0.330	0.335	0.696	0.565	0.719	0.369	0.510	0.965	0.912
South Africa	0.278	0.363	0.692	0.566	0.715	0.392	0.516	0.976	0.917
Macedonia, FYR	0.388	0.297	0.685	0.552	0.709	0.336	0.494	0.935	0.888
Turkey	0.310	0.341	0.684	0.558	0.707	0.372	0.505	0.954	0.900
Bosnia and Herzegovina	0.431	0.268	0.679	0.544	0.702	0.313	0.483	0.917	0.874
Serbia	0.349	0.315	0.677	0.549	0.700	0.350	0.494	0.933	0.883
Belarus	0.433	0.267	0.677	0.542	0.700	0.311	0.481	0.915	0.871
Romania	0.396	0.287	0.675	0.544	0.698	0.327	0.485	0.919	0.874
Saudi Arabia	0.356	0.310	0.674	0.546	0.697	0.346	0.491	0.928	0.879
Uruguay	0.379	0.296	0.673	0.543	0.696	0.334	0.486	0.920	0.873
Mauritius	0.432	0.265	0.673	0.539	0.696	0.310	0.479	0.910	0.866
Chile	0.310	0.335	0.672	0.548	0.695	0.366	0.496	0.938	0.884
Kazakhstan	0.260	0.361	0.669	0.550	0.692	0.388	0.502	0.952	0.892
Russian Federation	0.446	0.254	0.665	0.532	0.688	0.300	0.472	0.897	0.855
Argentina	0.456	0.248	0.663	0.530	0.686	0.294	0.469	0.893	0.851
Bulgaria	0.411	0.273	0.661	0.531	0.683	0.314	0.473	0.898	0.854
Oman	0.455	0.247	0.658	0.526	0.680	0.292	0.465	0.885	0.844
Iran, Islamic Rep.	0.211	0.378	0.650	0.539	0.673	0.399	0.497	0.950	0.882
Latvia	0.500	0.215	0.642	0.510	0.663	0.265	0.448	0.857	0.819
Mexico	0.550	0.184	0.640	0.506	0.661	0.241	0.441	0.848	0.812
Lebanon	0.673	0.106	0.635	0.496	0.657	0.182	0.424	0.831	0.799
Poland	0.505	0.205	0.622	0.494	0.643	0.255	0.434	0.830	0.794
Croatia	0.483	0.217	0.621	0.495	0.642	0.264	0.436	0.832	0.794
Macao, China	0.489	0.214	0.620	0.494	0.641	0.261	0.434	0.830	0.793
Lithuania	0.640	0.125	0.620	0.486	0.641	0.193	0.417	0.813	0.782
Estonia	0.566	0.168	0.614	0.485	0.635	0.225	0.421	0.813	0.779
Brunei Darussalam	0.552	0.174	0.608	0.480	0.628	0.228	0.418	0.806	0.772
Slovak Republic	0.520	0.192	0.606	0.481	0.626	0.242	0.421	0.807	0.772
Hungary	0.514	0.194	0.605	0.480	0.626	0.244	0.421	0.807	0.772
Korea, Rep.	0.392	0.255	0.594	0.479	0.614	0.290	0.428	0.810	0.769
Bahrain	0.666	0.104	0.594	0.464	0.614	0.173	0.397	0.777	0.747
Czech Republic	0.607	0.135	0.577	0.454	0.597	0.194	0.392	0.760	0.730
Slovenia	0.634	0.118	0.569	0.446	0.589	0.180	0.384	0.747	0.718
Israel	0.577	0.149	0.566	0.447	0.586	0.202	0.387	0.748	0.718

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Unconditional expenditure elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
High-income countries:									
Portugal	0.797	0.016	0.558	0.431	0.577	0.104	0.361	0.722	0.697
Qatar	0.613	0.127	0.555	0.436	0.574	0.184	0.376	0.731	0.701
Singapore	0.432	0.218	0.553	0.443	0.572	0.254	0.394	0.747	0.712
Malta	0.769	0.034	0.545	0.421	0.563	0.114	0.354	0.706	0.680
Kuwait	0.762	0.038	0.542	0.420	0.560	0.116	0.353	0.703	0.678
New Zealand	0.734	0.053	0.524	0.407	0.542	0.125	0.344	0.682	0.657
Finland	0.709	0.067	0.520	0.405	0.538	0.134	0.344	0.678	0.652
Taiwan, China	0.675	0.085	0.518	0.404	0.535	0.147	0.345	0.677	0.651
Spain	1.132	-0.246	0.511	0.384	0.529	-0.074	0.303	0.648	0.629
Italy	0.834	-0.009	0.508	0.391	0.525	0.078	0.325	0.655	0.633
Ireland	0.734	0.051	0.504	0.391	0.520	0.120	0.331	0.655	0.631
Denmark	0.659	0.091	0.502	0.393	0.519	0.149	0.336	0.658	0.632
Sweden	0.635	0.103	0.498	0.390	0.515	0.157	0.335	0.653	0.628
Hong Kong, China	0.639	0.100	0.496	0.389	0.513	0.154	0.334	0.651	0.625
Australia	0.746	0.043	0.491	0.380	0.507	0.112	0.321	0.637	0.614
Cyprus	0.999	-0.121	0.489	0.371	0.506	0.000	0.300	0.624	0.605
Belgium	0.747	0.042	0.488	0.378	0.504	0.111	0.319	0.634	0.611
Japan	0.682	0.077	0.488	0.380	0.504	0.136	0.324	0.637	0.613
France	0.787	0.019	0.482	0.372	0.498	0.093	0.312	0.624	0.602
Germany	0.757	0.035	0.473	0.366	0.489	0.103	0.309	0.613	0.591
Canada	0.670	0.080	0.472	0.369	0.488	0.136	0.315	0.618	0.594
Iceland	0.755	0.036	0.470	0.364	0.485	0.104	0.307	0.609	0.587
Netherlands	0.750	0.039	0.469	0.363	0.484	0.105	0.306	0.608	0.586
Norway	0.711	0.059	0.468	0.364	0.484	0.120	0.309	0.610	0.587
United Kingdom	0.846	-0.015	0.458	0.351	0.473	0.066	0.292	0.589	0.569
Switzerland	0.958	-0.085	0.455	0.346	0.470	0.018	0.282	0.582	0.563
Austria	0.891	-0.040	0.445	0.341	0.460	0.046	0.281	0.572	0.553
Luxembourg	1.239	-0.270	0.382	0.284	0.395	-0.106	0.221	0.482	0.468
United States	1.000	-0.085	0.343	0.260	0.354	-0.001	0.210	0.438	0.424
Low-income average	0.130	0.514	0.771	0.654	0.798	0.531	0.615	1.420	1.325
Middle-income average	0.439	0.253	0.649	0.521	0.671	0.297	0.462	0.882	0.839
High-income average	0.781	0.019	0.490	0.379	0.506	0.097	0.319	0.636	0.613

Countries are reported based on ascending per capita real income levels.

[a]As the estimated "food other" values were negative, these values are calculated using the actual budget shares. Calculated using equation (11).

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

Unconditional Frisch own-price elasticities of demand for food subcategories, 144 countries, 2005

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Low-income countries:									
Congo, Dem. Rep.	0.014	-0.502	-0.621	-0.551	-0.643	-0.507	-0.534	-1.007[a]	-3.334
Burundi	0.020	-0.485	-0.610	-0.538	-0.632	-0.490	-0.520	-1.037[a]	-1.725
Liberia	0.013	-0.494	-0.608	-0.540	-0.629	-0.498	-0.524	-1.540[a]	-5.204
Zimbabwe	0.031	-0.467	-0.604	-0.528	-0.625	-0.473	-0.508	-2.507	-1.218
Ethiopia	0.040	-0.456	-0.601	-0.523	-0.622	-0.463	-0.502	-1.669	-1.092
Niger	0.037	-0.459	-0.601	-0.524	-0.622	-0.466	-0.503	-1.867	-1.129
Guinea-Bissau	0.040	-0.455	-0.601	-0.523	-0.622	-0.463	-0.501	-1.658	-1.089
Mozambique	0.055	-0.440	-0.598	-0.516	-0.619	-0.448	-0.493	-1.280	-0.987
Malawi	0.017	-0.478	-0.595	-0.527	-0.617	-0.482	-0.510	-0.720[a]	-2.088
Rwanda	0.060	-0.434	-0.594	-0.512	-0.615	-0.442	-0.488	-1.209	-0.960
Angola	0.051	-0.439	-0.592	-0.512	-0.612	-0.447	-0.489	-1.333	-0.998
Chad	0.050	-0.440	-0.591	-0.512	-0.612	-0.448	-0.489	-1.351	-1.003
Gambia, The	0.027	-0.461	-0.591	-0.518	-0.612	-0.467	-0.500	-3.853	-1.287
Central African Republic	0.068	-0.425	-0.591	-0.507	-0.611	-0.434	-0.482	-1.136	-0.930
Mali	0.060	-0.431	-0.591	-0.509	-0.611	-0.440	-0.485	-1.206	-0.956
Tanzania	0.085	-0.413	-0.590	-0.504	-0.610	-0.424	-0.477	-1.044	-0.892
Sierra Leone	0.044	-0.443	-0.589	-0.511	-0.609	-0.450	-0.489	-1.475	-1.033
Guinea	0.045	-0.442	-0.588	-0.511	-0.609	-0.449	-0.489	-1.468	-1.031
Burkina Faso	0.072	-0.420	-0.587	-0.504	-0.608	-0.429	-0.478	-1.102	-0.914
Uganda	0.062	-0.426	-0.585	-0.504	-0.606	-0.435	-0.480	-1.177	-0.941
Madagascar	0.069	-0.421	-0.585	-0.502	-0.606	-0.430	-0.478	-1.119	-0.919
Zambia	0.018	-0.468	-0.585	-0.517	-0.606	-0.473	-0.501	-1.227[a]	-1.910
Congo, Rep.	0.070	-0.420	-0.584	-0.501	-0.605	-0.429	-0.477	-1.112	-0.916
Togo	0.075	-0.416	-0.584	-0.500	-0.604	-0.425	-0.475	-1.082	-0.904
Nepal	0.094	-0.402	-0.582	-0.495	-0.602	-0.413	-0.468	-0.999	-0.866
Ghana	0.061	-0.423	-0.581	-0.500	-0.601	-0.431	-0.476	-1.173	-0.935
Benin	0.077	-0.411	-0.579	-0.496	-0.599	-0.421	-0.470	-1.062	-0.892
Mauritania	0.105	-0.393	-0.579	-0.491	-0.599	-0.405	-0.463	-0.964	-0.848
Bangladesh	0.110	-0.390	-0.578	-0.490	-0.598	-0.401	-0.461	-0.952	-0.841
Côte d'Ivoire	0.095	-0.398	-0.578	-0.491	-0.597	-0.409	-0.464	-0.989	-0.859
Lao PDR	0.104	-0.393	-0.577	-0.490	-0.597	-0.404	-0.462	-0.964	-0.847
Kenya	0.074	-0.410	-0.575	-0.493	-0.595	-0.419	-0.468	-1.069	-0.891
Djibouti	0.123	-0.380	-0.575	-0.485	-0.594	-0.392	-0.455	-0.922	-0.824
Nigeria	0.092	-0.398	-0.574	-0.489	-0.594	-0.408	-0.462	-0.992	-0.857
Senegal	0.109	-0.388	-0.574	-0.486	-0.594	-0.399	-0.458	-0.949	-0.837
Cambodia	0.120	-0.379	-0.572	-0.483	-0.592	-0.392	-0.454	-0.922	-0.823
Cameroon	0.123	-0.377	-0.570	-0.481	-0.590	-0.389	-0.452	-0.915	-0.818
São Tomé and Principe	0.137	-0.369	-0.569	-0.479	-0.589	-0.382	-0.448	-0.893	-0.806

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Unconditional Frisch own-price elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
India	0.094	-0.393	-0.568	-0.484	-0.588	-0.403	-0.457	-0.977	-0.846
Yemen, Rep.	0.119	-0.378	-0.568	-0.480	-0.587	-0.390	-0.451	-0.918	-0.818
Vietnam	0.091	-0.394	-0.568	-0.484	-0.587	-0.404	-0.457	-0.985	-0.850
Mongolia	0.120	-0.376	-0.567	-0.479	-0.587	-0.389	-0.450	-0.915	-0.816
Iraq	0.111	-0.381	-0.566	-0.479	-0.585	-0.393	-0.451	-0.930	-0.823
Bhutan	0.127	-0.371	-0.565	-0.476	-0.584	-0.384	-0.446	-0.900	-0.807
China	0.094	-0.389	-0.564	-0.480	-0.583	-0.400	-0.453	-0.968	-0.839
Sudan	0.154	-0.354	-0.561	-0.470	-0.580	-0.369	-0.438	-0.860	-0.783
Lesotho	0.092	-0.387	-0.559	-0.476	-0.578	-0.398	-0.450	-0.966	-0.835
Tajikistan	0.103	-0.380	-0.559	-0.474	-0.578	-0.391	-0.447	-0.934	-0.820
Maldives	0.116	-0.370	-0.554	-0.469	-0.574	-0.382	-0.441	-0.902	-0.801
Morocco	0.165	-0.344	-0.554	-0.463	-0.573	-0.359	-0.430	-0.840	-0.768
Pakistan	0.150	-0.351	-0.552	-0.463	-0.571	-0.365	-0.432	-0.852	-0.774
Indonesia	0.213	-0.319	-0.550	-0.456	-0.569	-0.337	-0.420	-0.803	-0.746
Kyrgyz Republic	0.149	-0.350	-0.550	-0.462	-0.569	-0.364	-0.431	-0.850	-0.772
Philippines	0.219	-0.316	-0.550	-0.455	-0.568	-0.334	-0.418	-0.799	-0.743
Cape Verde	0.167	-0.341	-0.550	-0.459	-0.568	-0.356	-0.427	-0.832	-0.762
Bolivia	0.163	-0.343	-0.549	-0.459	-0.568	-0.357	-0.427	-0.835	-0.763
Namibia	0.148	-0.348	-0.546	-0.458	-0.565	-0.362	-0.428	-0.845	-0.767
Sri Lanka	0.182	-0.331	-0.545	-0.454	-0.563	-0.347	-0.421	-0.814	-0.749
Botswana	0.137	-0.352	-0.544	-0.458	-0.563	-0.365	-0.428	-0.854	-0.770
Gabon	0.188	-0.326	-0.543	-0.451	-0.561	-0.342	-0.418	-0.806	-0.743
Azerbaijan	0.272	-0.287	-0.542	-0.444	-0.561	-0.309	-0.405	-0.767	-0.720
Syrian Arab Republic	0.257	-0.294	-0.541	-0.445	-0.560	-0.315	-0.407	-0.771	-0.722
Equatorial Guinea	0.204	-0.316	-0.537	-0.446	-0.556	-0.333	-0.411	-0.789	-0.731
Paraguay	0.267	-0.286	-0.536	-0.440	-0.554	-0.308	-0.401	-0.760	-0.713
Fiji	0.228	-0.303	-0.534	-0.441	-0.553	-0.322	-0.405	-0.773	-0.720
Swaziland	0.213	-0.309	-0.532	-0.441	-0.550	-0.326	-0.406	-0.777	-0.721
Moldova	0.153	-0.336	-0.531	-0.445	-0.549	-0.350	-0.415	-0.816	-0.743
Egypt, Arab Rep.	0.279	-0.278	-0.530	-0.434	-0.548	-0.300	-0.395	-0.748	-0.703
Ecuador	0.240	-0.293	-0.527	-0.434	-0.545	-0.313	-0.398	-0.758	-0.707
Jordan	0.294	-0.269	-0.527	-0.430	-0.545	-0.293	-0.391	-0.739	-0.696
Georgia	0.216	-0.304	-0.526	-0.435	-0.544	-0.321	-0.401	-0.766	-0.712
Thailand	0.234	-0.295	-0.525	-0.433	-0.543	-0.314	-0.398	-0.757	-0.706
Colombia	0.244	-0.290	-0.525	-0.432	-0.542	-0.310	-0.396	-0.752	-0.703
Albania	0.242	-0.291	-0.523	-0.431	-0.541	-0.310	-0.395	-0.751	-0.701
Tunisia	0.324	-0.254	-0.522	-0.425	-0.540	-0.279	-0.384	-0.725	-0.685
Peru	0.301	-0.263	-0.520	-0.425	-0.538	-0.287	-0.385	-0.728	-0.686
Armenia	0.374	-0.230	-0.518	-0.419	-0.536	-0.259	-0.375	-0.710	-0.674

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Unconditional Frisch own-price elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Middle-income countries:									
Venezuela, RB	0.342	-0.242	-0.514	-0.417	-0.532	-0.268	-0.376	-0.710	-0.672
Malaysia	0.256	-0.279	-0.514	-0.422	-0.532	-0.299	-0.386	-0.733	-0.686
Ukraine	0.312	-0.255	-0.513	-0.418	-0.530	-0.279	-0.378	-0.715	-0.675
Brazil	0.281	-0.267	-0.512	-0.419	-0.529	-0.289	-0.381	-0.721	-0.678
Montenegro	0.330	-0.246	-0.510	-0.415	-0.528	-0.271	-0.374	-0.708	-0.669
South Africa	0.278	-0.266	-0.507	-0.415	-0.525	-0.287	-0.378	-0.716	-0.673
Macedonia, FYR	0.388	-0.218	-0.503	-0.405	-0.520	-0.247	-0.362	-0.686	-0.652
Turkey	0.310	-0.250	-0.502	-0.409	-0.519	-0.273	-0.370	-0.700	-0.660
Bosnia and Herzegovina	0.431	-0.197	-0.498	-0.399	-0.515	-0.229	-0.354	-0.673	-0.641
Serbia	0.349	-0.231	-0.497	-0.402	-0.513	-0.257	-0.362	-0.685	-0.648
Belarus	0.433	-0.196	-0.496	-0.398	-0.513	-0.228	-0.353	-0.671	-0.639
Romania	0.396	-0.211	-0.495	-0.399	-0.512	-0.240	-0.356	-0.674	-0.641
Saudi Arabia	0.356	-0.227	-0.495	-0.401	-0.511	-0.254	-0.360	-0.681	-0.645
Uruguay	0.379	-0.217	-0.494	-0.398	-0.510	-0.245	-0.357	-0.675	-0.641
Mauritius	0.432	-0.195	-0.494	-0.396	-0.510	-0.227	-0.351	-0.667	-0.636
Chile	0.310	-0.245	-0.493	-0.402	-0.510	-0.268	-0.364	-0.688	-0.649
Kazakhstan	0.260	-0.265	-0.491	-0.403	-0.508	-0.284	-0.368	-0.699	-0.654
Russian Federation	0.446	-0.187	-0.488	-0.390	-0.504	-0.220	-0.346	-0.658	-0.627
Argentina	0.456	-0.182	-0.487	-0.389	-0.503	-0.216	-0.344	-0.655	-0.625
Bulgaria	0.411	-0.200	-0.485	-0.390	-0.501	-0.230	-0.347	-0.658	-0.626
Oman	0.455	-0.181	-0.482	-0.386	-0.499	-0.214	-0.341	-0.649	-0.619
Iran, Islamic Rep.	0.211	-0.277	-0.477	-0.395	-0.493	-0.293	-0.364	-0.697	-0.647
Latvia	0.500	-0.157	-0.471	-0.374	-0.487	-0.194	-0.329	-0.629	-0.601
Mexico	0.550	-0.135	-0.469	-0.371	-0.485	-0.177	-0.323	-0.622	-0.596
Lebanon	0.673	-0.078	-0.466	-0.364	-0.482	-0.133	-0.311	-0.609	-0.586
Poland	0.505	-0.151	-0.456	-0.363	-0.472	-0.187	-0.318	-0.609	-0.582
Croatia	0.483	-0.159	-0.455	-0.363	-0.471	-0.193	-0.320	-0.610	-0.583
Macao, China	0.489	-0.157	-0.455	-0.362	-0.470	-0.191	-0.319	-0.609	-0.582
Lithuania	0.640	-0.091	-0.455	-0.356	-0.470	-0.141	-0.306	-0.597	-0.573
Estonia	0.566	-0.123	-0.451	-0.356	-0.466	-0.165	-0.309	-0.596	-0.572
Brunei Darussalam	0.552	-0.128	-0.446	-0.352	-0.461	-0.167	-0.307	-0.591	-0.566
Slovak Republic	0.520	-0.141	-0.444	-0.353	-0.459	-0.177	-0.309	-0.592	-0.566
Hungary	0.514	-0.143	-0.444	-0.352	-0.459	-0.179	-0.309	-0.592	-0.566
Korea, Rep.	0.392	-0.187	-0.436	-0.351	-0.451	-0.213	-0.314	-0.594	-0.564
Bahrain	0.666	-0.076	-0.436	-0.340	-0.450	-0.127	-0.291	-0.570	-0.548
Czech Republic	0.607	-0.099	-0.424	-0.333	-0.438	-0.142	-0.287	-0.558	-0.535
Slovenia	0.634	-0.087	-0.418	-0.327	-0.432	-0.132	-0.281	-0.548	-0.527
Israel	0.577	-0.109	-0.416	-0.328	-0.430	-0.148	-0.284	-0.549	-0.527

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Unconditional Frisch own-price elasticities of demand for food subcategories, 144 countries, 2005, *continued*

Country	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
High-income countries:									
Portugal	0.797	-0.012	-0.410	-0.316	-0.423	-0.076	-0.265	-0.530	-0.511
Qatar	0.613	-0.093	-0.407	-0.320	-0.421	-0.135	-0.276	-0.536	-0.515
Singapore	0.432	-0.160	-0.406	-0.325	-0.419	-0.187	-0.289	-0.548	-0.522
Malta	0.769	-0.025	-0.399	-0.309	-0.413	-0.084	-0.260	-0.518	-0.499
Kuwait	0.762	-0.028	-0.398	-0.308	-0.411	-0.085	-0.259	-0.516	-0.497
New Zealand	0.734	-0.039	-0.385	-0.299	-0.398	-0.092	-0.253	-0.500	-0.482
Finland	0.709	-0.049	-0.382	-0.297	-0.394	-0.098	-0.252	-0.497	-0.479
Taiwan, China	0.675	-0.062	-0.380	-0.297	-0.393	-0.108	-0.253	-0.497	-0.478
Spain	1.132	0.000[b]	-0.375	-0.281	-0.388	0.000[b]	-0.223	-0.476	-0.461
Italy	0.834	0.000[b]	-0.373	-0.287	-0.385	-0.057	-0.238	-0.481	-0.464
Ireland	0.734	-0.037	-0.369	-0.287	-0.382	-0.088	-0.243	-0.480	-0.463
Denmark	0.659	-0.067	-0.368	-0.288	-0.381	-0.109	-0.247	-0.482	-0.464
Sweden	0.635	-0.075	-0.365	-0.286	-0.378	-0.115	-0.246	-0.479	-0.461
Hong Kong, China	0.639	-0.073	-0.364	-0.285	-0.376	-0.113	-0.245	-0.477	-0.459
Australia	0.746	-0.032	-0.360	-0.279	-0.372	-0.082	-0.236	-0.467	-0.450
Cyprus	0.999	0.000[b]	-0.359	-0.272	-0.371	0.000[b]	-0.220	-0.458	-0.443
Belgium	0.747	-0.031	-0.358	-0.278	-0.370	-0.081	-0.234	-0.465	-0.448
Japan	0.682	-0.056	-0.358	-0.279	-0.370	-0.099	-0.238	-0.467	-0.449
France	0.787	-0.014	-0.354	-0.273	-0.366	-0.069	-0.229	-0.458	-0.442
Germany	0.757	-0.026	-0.347	-0.269	-0.359	-0.076	-0.226	-0.450	-0.434
Canada	0.670	-0.059	-0.347	-0.271	-0.358	-0.100	-0.231	-0.453	-0.436
Iceland	0.755	-0.027	-0.345	-0.267	-0.356	-0.076	-0.225	-0.447	-0.431
Netherlands	0.750	-0.029	-0.344	-0.266	-0.355	-0.077	-0.225	-0.446	-0.430
Norway	0.711	-0.044	-0.344	-0.267	-0.355	-0.088	-0.227	-0.447	-0.431
United Kingdom	0.846	0.000[b]	-0.336	-0.258	-0.347	-0.048	-0.214	-0.432	-0.418
Switzerland	0.958	0.000[b]	-0.334	-0.254	-0.345	-0.013	-0.207	-0.427	-0.413
Austria	0.891	0.000[b]	-0.327	-0.250	-0.338	-0.034	-0.206	-0.420	-0.406
Luxembourg	1.239	0.000[b]	-0.280	-0.208	-0.290	0.000[b]	-0.162	-0.354	-0.343
United States	1.000	0.000[b]	-0.252	-0.191	-0.260	0.000[b]	-0.154	-0.321	-0.311
Low-income average	0.130	-0.377	-0.566	-0.480	-0.585	-0.390	-0.451	-1.042	-0.972
Middle-income average	0.439	-0.186	-0.476	-0.382	-0.492	-0.218	-0.339	-0.647	-0.615
High-income average	0.781	-0.036	-0.359	-0.278	-0.371	-0.076	-0.234	-0.467	-0.450

Countries are reported based on ascending per capita real income levels.

[a]As the estimated budget shares for "food other" values were negative, these values are calculated using the actual budget shares. Calculated using equation (12).

[b]As these estimated Frisch own-price elasticities were positive, implying a Giffen good, which does not make economic sense, these values were set to zero.

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

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Marginal shares for aggregate consumption categories, 144 countries, 2005

	Per capita income	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
Low-income countries:										
Congo, Dem. Rep.	0.005	0.634	0.060	0.135	0.048	0.007	0.079	-0.010	0.037	0.010
Burundi	0.009	0.564	0.059	0.142	0.050	0.021	0.093	0.006	0.035	0.030
Liberia	0.010	0.551	0.059	0.144	0.050	0.023	0.096	0.010	0.035	0.033
Zimbabwe	0.012	0.532	0.058	0.146	0.051	0.027	0.099	0.014	0.035	0.038
Ethiopia	0.014	0.518	0.058	0.147	0.051	0.029	0.102	0.018	0.034	0.043
Niger	0.014	0.517	0.058	0.147	0.051	0.029	0.103	0.018	0.034	0.043
Guinea-Bissau	0.014	0.516	0.058	0.147	0.051	0.030	0.103	0.018	0.034	0.043
Mozambique	0.017	0.500	0.058	0.149	0.051	0.033	0.106	0.022	0.034	0.047
Malawi	0.018	0.489	0.057	0.150	0.052	0.035	0.108	0.025	0.034	0.051
Rwanda	0.019	0.486	0.057	0.150	0.052	0.035	0.109	0.025	0.034	0.052
Angola	0.021	0.474	0.057	0.151	0.052	0.038	0.111	0.028	0.033	0.055
Chad	0.021	0.472	0.057	0.152	0.052	0.038	0.112	0.029	0.033	0.055
Gambia, The	0.022	0.470	0.057	0.152	0.052	0.038	0.112	0.029	0.033	0.056
Central African Republic	0.022	0.469	0.057	0.152	0.052	0.038	0.112	0.030	0.033	0.056
Mali	0.022	0.469	0.057	0.152	0.052	0.039	0.112	0.030	0.033	0.056
Tanzania	0.023	0.466	0.057	0.152	0.052	0.039	0.113	0.030	0.033	0.057
Sierra Leone	0.024	0.461	0.057	0.153	0.052	0.040	0.114	0.032	0.033	0.059
Guinea	0.024	0.460	0.057	0.153	0.052	0.040	0.114	0.032	0.033	0.059
Burkina Faso	0.025	0.456	0.057	0.153	0.053	0.041	0.115	0.033	0.033	0.060
Uganda	0.027	0.447	0.057	0.154	0.053	0.042	0.117	0.035	0.033	0.062
Madagascar	0.027	0.447	0.057	0.154	0.053	0.043	0.117	0.035	0.033	0.062
Zambia	0.027	0.446	0.057	0.154	0.053	0.043	0.117	0.035	0.033	0.063
Congo, Rep.	0.028	0.443	0.057	0.155	0.053	0.043	0.117	0.036	0.033	0.063
Togo	0.029	0.441	0.057	0.155	0.053	0.044	0.118	0.036	0.033	0.064
Nepal	0.031	0.434	0.057	0.156	0.053	0.045	0.119	0.038	0.032	0.066
Ghana	0.032	0.429	0.056	0.156	0.053	0.046	0.120	0.039	0.032	0.067
Benin	0.034	0.423	0.056	0.157	0.053	0.047	0.121	0.041	0.032	0.069
Mauritania	0.034	0.422	0.056	0.157	0.053	0.047	0.122	0.041	0.032	0.069
Bangladesh	0.035	0.419	0.056	0.157	0.054	0.048	0.122	0.042	0.032	0.070
Côte d'Ivoire	0.035	0.418	0.056	0.157	0.054	0.048	0.122	0.042	0.032	0.071
Lao PDR	0.035	0.418	0.056	0.157	0.054	0.048	0.122	0.042	0.032	0.071
Kenya	0.038	0.409	0.056	0.158	0.054	0.050	0.124	0.044	0.032	0.073
Djibouti	0.039	0.408	0.056	0.158	0.054	0.050	0.124	0.044	0.032	0.073
Nigeria	0.039	0.406	0.056	0.158	0.054	0.050	0.125	0.045	0.032	0.074
Senegal	0.040	0.406	0.056	0.158	0.054	0.050	0.125	0.045	0.032	0.074
Cambodia	0.042	0.399	0.056	0.159	0.054	0.052	0.126	0.046	0.032	0.076
Cameroon	0.045	0.393	0.056	0.160	0.054	0.053	0.127	0.048	0.032	0.078
São Tomé and Principe	0.045	0.391	0.056	0.160	0.054	0.053	0.128	0.048	0.032	0.078

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Marginal shares for aggregate consumption categories, 144 countries, 2005, *continued*

	Per capita income	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi-cations	Recreation	Education	Other
India	0.047	0.388	0.056	0.160	0.054	0.054	0.129	0.049	0.031	0.079
Yemen, Rep.	0.048	0.386	0.056	0.160	0.054	0.054	0.129	0.050	0.031	0.080
Vietnam	0.048	0.386	0.056	0.160	0.054	0.054	0.129	0.050	0.031	0.080
Mongolia	0.048	0.384	0.056	0.161	0.054	0.054	0.129	0.050	0.031	0.080
Iraq	0.050	0.380	0.056	0.161	0.055	0.055	0.130	0.051	0.031	0.081
Bhutan	0.052	0.377	0.056	0.161	0.055	0.056	0.131	0.052	0.031	0.082
China	0.054	0.373	0.055	0.162	0.055	0.057	0.132	0.053	0.031	0.083
Sudan	0.058	0.364	0.055	0.163	0.055	0.058	0.133	0.055	0.031	0.086
Lesotho	0.061	0.360	0.055	0.163	0.055	0.059	0.134	0.056	0.031	0.087
Tajikistan	0.061	0.359	0.055	0.163	0.055	0.059	0.134	0.056	0.031	0.087
Maldives	0.068	0.348	0.055	0.164	0.055	0.061	0.137	0.059	0.031	0.090
Morocco	0.069	0.346	0.055	0.164	0.055	0.062	0.137	0.059	0.031	0.091
Pakistan	0.071	0.343	0.055	0.165	0.056	0.062	0.138	0.060	0.030	0.092
Indonesia	0.075	0.337	0.055	0.165	0.056	0.063	0.139	0.061	0.030	0.093
Kyrgyz Republic	0.075	0.337	0.055	0.165	0.056	0.063	0.139	0.061	0.030	0.093
Philippines	0.076	0.335	0.055	0.166	0.056	0.064	0.139	0.062	0.030	0.094
Cape Verde	0.076	0.335	0.055	0.166	0.056	0.064	0.139	0.062	0.030	0.094
Bolivia	0.077	0.334	0.055	0.166	0.056	0.064	0.139	0.062	0.030	0.094
Namibia	0.082	0.327	0.055	0.166	0.056	0.065	0.141	0.064	0.030	0.096
Sri Lanka	0.085	0.324	0.055	0.167	0.056	0.066	0.141	0.065	0.030	0.097
Botswana	0.086	0.322	0.055	0.167	0.056	0.066	0.142	0.065	0.030	0.098
Gabon	0.089	0.319	0.055	0.167	0.056	0.067	0.142	0.066	0.030	0.098
Azerbaijan	0.090	0.318	0.054	0.167	0.056	0.067	0.143	0.066	0.030	0.099
Syrian Arab Republic	0.092	0.315	0.054	0.168	0.056	0.067	0.143	0.067	0.030	0.099
Equatorial Guinea	0.099	0.307	0.054	0.168	0.056	0.069	0.145	0.069	0.030	0.102
Paraguay	0.102	0.304	0.054	0.169	0.057	0.070	0.145	0.069	0.030	0.103
Fiji	0.106	0.300	0.054	0.169	0.057	0.070	0.146	0.070	0.030	0.104
Swaziland	0.110	0.296	0.054	0.170	0.057	0.071	0.147	0.071	0.029	0.105
Moldova	0.112	0.294	0.054	0.170	0.057	0.071	0.148	0.072	0.029	0.105
Egypt, Arab Rep.	0.114	0.291	0.054	0.170	0.057	0.072	0.148	0.072	0.029	0.106
Ecuador	0.121	0.286	0.054	0.171	0.057	0.073	0.149	0.074	0.029	0.108
Jordan	0.121	0.285	0.054	0.171	0.057	0.073	0.149	0.074	0.029	0.108
Georgia	0.123	0.284	0.054	0.171	0.057	0.073	0.150	0.074	0.029	0.108
Thailand	0.125	0.282	0.054	0.171	0.057	0.074	0.150	0.075	0.029	0.109
Colombia	0.127	0.280	0.054	0.171	0.057	0.074	0.150	0.075	0.029	0.109
Albania	0.130	0.278	0.054	0.171	0.057	0.074	0.151	0.076	0.029	0.110
Tunisia	0.132	0.276	0.054	0.172	0.057	0.075	0.151	0.076	0.029	0.110
Peru	0.136	0.272	0.054	0.172	0.057	0.075	0.152	0.077	0.029	0.111
Armenia	0.141	0.269	0.054	0.172	0.057	0.076	0.152	0.078	0.029	0.112

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Marginal shares for aggregate consumption categories, 144 countries, 2005, *continued*

	Per capita income	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
Middle-income countries:										
Venezuela, RB	0.151	0.261	0.054	0.173	0.058	0.078	0.154	0.080	0.029	0.114
Malaysia	0.151	0.261	0.053	0.173	0.058	0.078	0.154	0.080	0.029	0.115
Ukraine	0.154	0.259	0.053	0.173	0.058	0.078	0.154	0.080	0.029	0.115
Brazil	0.157	0.257	0.053	0.174	0.058	0.078	0.155	0.081	0.029	0.116
Montenegro	0.160	0.255	0.053	0.174	0.058	0.079	0.155	0.081	0.029	0.116
South Africa	0.168	0.250	0.053	0.174	0.058	0.080	0.156	0.082	0.028	0.118
Macedonia, FYR	0.180	0.243	0.053	0.175	0.058	0.081	0.158	0.084	0.028	0.120
Turkey	0.182	0.241	0.053	0.175	0.058	0.081	0.158	0.085	0.028	0.120
Bosnia and Herzegovina	0.193	0.235	0.053	0.176	0.058	0.082	0.159	0.086	0.028	0.122
Serbia	0.196	0.233	0.053	0.176	0.058	0.083	0.160	0.086	0.028	0.122
Belarus	0.196	0.233	0.053	0.176	0.058	0.083	0.160	0.087	0.028	0.122
Romania	0.200	0.231	0.053	0.176	0.058	0.083	0.160	0.087	0.028	0.123
Saudi Arabia	0.201	0.230	0.053	0.176	0.058	0.083	0.160	0.087	0.028	0.123
Uruguay	0.204	0.229	0.053	0.176	0.058	0.084	0.161	0.088	0.028	0.124
Mauritius	0.204	0.229	0.053	0.176	0.058	0.084	0.161	0.088	0.028	0.124
Chile	0.205	0.228	0.053	0.176	0.058	0.084	0.161	0.088	0.028	0.124
Kazakhstan	0.212	0.225	0.053	0.177	0.059	0.084	0.161	0.088	0.028	0.125
Russian Federation	0.220	0.221	0.053	0.177	0.059	0.085	0.162	0.089	0.028	0.126
Argentina	0.224	0.219	0.053	0.177	0.059	0.086	0.163	0.090	0.028	0.126
Bulgaria	0.228	0.217	0.053	0.178	0.059	0.086	0.163	0.090	0.028	0.127
Oman	0.235	0.213	0.053	0.178	0.059	0.087	0.164	0.091	0.028	0.128
Iran, Islamic Rep.	0.251	0.207	0.053	0.179	0.059	0.088	0.165	0.093	0.027	0.130
Latvia	0.270	0.199	0.052	0.179	0.059	0.089	0.167	0.095	0.027	0.132
Mexico	0.274	0.197	0.052	0.180	0.059	0.090	0.167	0.095	0.027	0.133
Lebanon	0.284	0.193	0.052	0.180	0.059	0.090	0.168	0.096	0.027	0.134
Poland	0.314	0.182	0.052	0.181	0.060	0.092	0.170	0.099	0.027	0.137
Croatia	0.316	0.182	0.052	0.181	0.060	0.093	0.170	0.099	0.027	0.137
Macao, China	0.318	0.181	0.052	0.181	0.060	0.093	0.170	0.099	0.027	0.137
Lithuania	0.319	0.181	0.052	0.181	0.060	0.093	0.170	0.099	0.027	0.137
Estonia	0.332	0.176	0.052	0.182	0.060	0.094	0.171	0.100	0.027	0.138
Brunei Darussalam	0.347	0.172	0.052	0.182	0.060	0.094	0.172	0.101	0.027	0.140
Slovak Republic	0.351	0.170	0.052	0.182	0.060	0.095	0.172	0.102	0.027	0.140
Hungary	0.353	0.170	0.052	0.182	0.060	0.095	0.173	0.102	0.027	0.140
Korea, Rep.	0.379	0.162	0.052	0.183	0.060	0.096	0.174	0.104	0.026	0.142
Bahrain	0.380	0.162	0.052	0.183	0.060	0.096	0.174	0.104	0.026	0.142
Czech Republic	0.420	0.151	0.052	0.184	0.060	0.098	0.176	0.106	0.026	0.145
Slovenia	0.439	0.146	0.051	0.185	0.061	0.099	0.177	0.108	0.026	0.147
Israel	0.446	0.144	0.051	0.185	0.061	0.100	0.178	0.108	0.026	0.147

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Marginal shares for aggregate consumption categories, 144 countries, 2005, *continued*

	Per capita income	Food, beverages, & tobacco	Clothing & footwear	Housing	House furnishings	Medical & health	Transport & communi- cations	Recreation	Education	Other
High-income countries:										
Portugal	0.466	0.140	0.051	0.185	0.061	0.100	0.179	0.109	0.026	0.149
Qatar	0.474	0.138	0.051	0.186	0.061	0.101	0.179	0.110	0.026	0.149
Singapore	0.480	0.137	0.051	0.186	0.061	0.101	0.179	0.110	0.026	0.150
Malta	0.501	0.132	0.051	0.186	0.061	0.102	0.180	0.111	0.026	0.151
Kuwait	0.507	0.131	0.051	0.186	0.061	0.102	0.180	0.111	0.026	0.151
New Zealand	0.551	0.122	0.051	0.187	0.061	0.104	0.182	0.113	0.026	0.154
Finland	0.562	0.119	0.051	0.188	0.061	0.104	0.183	0.114	0.026	0.154
Taiwan, China	0.567	0.118	0.051	0.188	0.061	0.104	0.183	0.114	0.026	0.155
Spain	0.584	0.115	0.051	0.188	0.061	0.105	0.183	0.115	0.025	0.155
Italy	0.592	0.114	0.051	0.188	0.061	0.105	0.184	0.115	0.025	0.156
Ireland	0.604	0.112	0.051	0.188	0.061	0.106	0.184	0.116	0.025	0.156
Denmark	0.607	0.111	0.051	0.188	0.061	0.106	0.184	0.116	0.025	0.157
Sweden	0.618	0.109	0.051	0.189	0.062	0.106	0.185	0.116	0.025	0.157
Hong Kong, China	0.623	0.108	0.051	0.189	0.062	0.106	0.185	0.117	0.025	0.157
Australia	0.636	0.106	0.051	0.189	0.062	0.107	0.185	0.117	0.025	0.158
Cyprus	0.640	0.105	0.051	0.189	0.062	0.107	0.185	0.117	0.025	0.158
Belgium	0.643	0.105	0.051	0.189	0.062	0.107	0.186	0.118	0.025	0.158
Japan	0.644	0.105	0.051	0.189	0.062	0.107	0.186	0.118	0.025	0.158
France	0.658	0.102	0.051	0.189	0.062	0.107	0.186	0.118	0.025	0.159
Germany	0.681	0.099	0.051	0.190	0.062	0.108	0.187	0.119	0.025	0.160
Canada	0.682	0.099	0.051	0.190	0.062	0.108	0.187	0.119	0.025	0.160
Iceland	0.689	0.097	0.051	0.190	0.062	0.108	0.187	0.119	0.025	0.160
Netherlands	0.692	0.097	0.051	0.190	0.062	0.108	0.187	0.119	0.025	0.161
Norway	0.692	0.097	0.051	0.190	0.062	0.108	0.187	0.119	0.025	0.161
United Kingdom	0.720	0.093	0.051	0.190	0.062	0.109	0.188	0.120	0.025	0.162
Switzerland	0.726	0.092	0.051	0.190	0.062	0.109	0.188	0.121	0.025	0.162
Austria	0.750	0.088	0.050	0.191	0.062	0.110	0.189	0.122	0.025	0.163
Luxembourg	0.906	0.068	0.050	0.193	0.063	0.114	0.193	0.126	0.024	0.169
United States	1.000	0.057	0.050	0.194	0.063	0.116	0.195	0.129	0.024	0.172
Low-income average	0.058	0.392	0.056	0.160	0.054	0.053	0.128	0.048	0.032	0.078
Middle-income average	0.258	0.209	0.053	0.178	0.059	0.087	0.165	0.092	0.028	0.129
High-income average	0.638	0.107	0.051	0.189	0.062	0.106	0.185	0.117	0.025	0.158

Countries are reported based on ascending per capita real income levels.

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

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Conditional marginal shares for food subgroups, 144 countries, 2005

Country	Per capita income	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Low-income countries:										
Congo, Dem. Rep.	0.005	0.014	0.311	0.147	0.067	0.078	0.060	0.227	0.048	0.063
Burundi	0.009	0.020	0.286	0.147	0.064	0.078	0.055	0.214	0.077	0.079
Liberia	0.010	0.013	0.318	0.147	0.067	0.078	0.061	0.231	0.040	0.058
Zimbabwe	0.012	0.031	0.252	0.146	0.060	0.079	0.049	0.197	0.116	0.102
Ethiopia	0.014	0.040	0.232	0.146	0.057	0.080	0.045	0.187	0.138	0.115
Niger	0.014	0.037	0.239	0.146	0.058	0.080	0.047	0.190	0.130	0.110
Guinea-Bissau	0.014	0.040	0.232	0.146	0.057	0.080	0.045	0.187	0.139	0.115
Mozambique	0.017	0.055	0.208	0.145	0.054	0.080	0.041	0.174	0.166	0.131
Malawi	0.018	0.017	0.298	0.147	0.065	0.078	0.057	0.220	0.064	0.071
Rwanda	0.019	0.060	0.201	0.145	0.053	0.081	0.040	0.171	0.174	0.136
Angola	0.021	0.051	0.214	0.145	0.055	0.080	0.042	0.177	0.159	0.127
Chad	0.021	0.050	0.215	0.145	0.055	0.080	0.042	0.178	0.157	0.126
Gambia, The	0.022	0.027	0.262	0.146	0.061	0.079	0.051	0.202	0.104	0.095
Central African Republic	0.022	0.068	0.191	0.145	0.052	0.081	0.038	0.166	0.185	0.142
Mali	0.022	0.060	0.201	0.145	0.053	0.081	0.040	0.171	0.174	0.135
Tanzania	0.023	0.085	0.174	0.145	0.050	0.081	0.035	0.157	0.205	0.153
Sierra Leone	0.024	0.044	0.224	0.146	0.056	0.080	0.044	0.183	0.147	0.120
Guinea	0.024	0.045	0.224	0.146	0.056	0.080	0.044	0.182	0.148	0.120
Burkina Faso	0.025	0.072	0.187	0.145	0.052	0.081	0.037	0.163	0.190	0.145
Uganda	0.027	0.062	0.199	0.145	0.053	0.081	0.039	0.170	0.177	0.137
Madagascar	0.027	0.069	0.190	0.145	0.052	0.081	0.038	0.165	0.186	0.142
Zambia	0.027	0.018	0.294	0.147	0.065	0.078	0.057	0.218	0.067	0.074
Congo, Rep.	0.028	0.070	0.189	0.145	0.052	0.081	0.038	0.165	0.187	0.143
Togo	0.029	0.075	0.184	0.145	0.051	0.081	0.037	0.162	0.193	0.146
Nepal	0.031	0.094	0.167	0.145	0.049	0.081	0.033	0.153	0.213	0.158
Ghana	0.032	0.061	0.199	0.145	0.053	0.081	0.039	0.170	0.176	0.136
Benin	0.034	0.077	0.182	0.145	0.051	0.081	0.036	0.161	0.195	0.148
Mauritania	0.034	0.105	0.158	0.144	0.048	0.082	0.032	0.149	0.223	0.164
Bangladesh	0.035	0.110	0.155	0.144	0.048	0.082	0.031	0.147	0.227	0.166
Côte d'Ivoire	0.035	0.095	0.166	0.145	0.049	0.081	0.033	0.153	0.214	0.159
Lao PDR	0.035	0.104	0.159	0.144	0.048	0.082	0.032	0.149	0.222	0.163
Kenya	0.038	0.074	0.185	0.145	0.052	0.081	0.037	0.163	0.192	0.146
Djibouti	0.039	0.123	0.146	0.144	0.047	0.082	0.030	0.143	0.237	0.172
Nigeria	0.039	0.092	0.168	0.145	0.050	0.081	0.034	0.154	0.211	0.157
Senegal	0.040	0.109	0.156	0.144	0.048	0.082	0.031	0.148	0.226	0.165
Cambodia	0.042	0.120	0.148	0.144	0.047	0.082	0.030	0.144	0.235	0.171
Cameroon	0.045	0.123	0.146	0.144	0.047	0.082	0.030	0.143	0.237	0.172
São Tomé and Principe	0.045	0.137	0.137	0.144	0.046	0.082	0.028	0.138	0.247	0.177

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Conditional marginal shares for food subgroups, 144 countries, 2005, *continued*

Country	Per capita income	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
India	0.047	0.094	0.167	0.145	0.049	0.081	0.033	0.153	0.213	0.158
Yemen, Rep.	0.048	0.119	0.148	0.144	0.047	0.082	0.030	0.144	0.234	0.170
Vietnam	0.048	0.091	0.169	0.145	0.050	0.081	0.034	0.155	0.210	0.156
Mongolia	0.048	0.120	0.148	0.144	0.047	0.082	0.030	0.144	0.235	0.171
Iraq	0.050	0.111	0.154	0.144	0.048	0.082	0.031	0.147	0.228	0.167
Bhutan	0.052	0.127	0.143	0.144	0.047	0.082	0.029	0.141	0.240	0.173
China	0.054	0.094	0.167	0.145	0.049	0.081	0.033	0.153	0.213	0.158
Sudan	0.058	0.154	0.129	0.144	0.045	0.082	0.026	0.134	0.257	0.183
Lesotho	0.061	0.092	0.168	0.145	0.050	0.081	0.034	0.154	0.211	0.157
Tajikistan	0.061	0.103	0.159	0.144	0.048	0.082	0.032	0.149	0.222	0.163
Maldives	0.068	0.116	0.150	0.144	0.047	0.082	0.030	0.145	0.232	0.169
Morocco	0.069	0.165	0.123	0.144	0.044	0.083	0.025	0.131	0.263	0.187
Pakistan	0.071	0.150	0.131	0.144	0.045	0.082	0.027	0.135	0.254	0.182
Indonesia	0.075	0.213	0.104	0.144	0.042	0.083	0.022	0.121	0.285	0.200
Kyrgyz Republic	0.075	0.149	0.131	0.144	0.045	0.082	0.027	0.135	0.254	0.182
Philippines	0.076	0.219	0.101	0.143	0.042	0.083	0.021	0.120	0.288	0.201
Cape Verde	0.076	0.167	0.122	0.144	0.044	0.083	0.025	0.131	0.264	0.187
Bolivia	0.077	0.163	0.125	0.144	0.044	0.083	0.026	0.132	0.261	0.186
Namibia	0.082	0.148	0.132	0.144	0.045	0.082	0.027	0.136	0.253	0.181
Sri Lanka	0.085	0.182	0.116	0.144	0.043	0.083	0.024	0.127	0.271	0.192
Botswana	0.086	0.137	0.138	0.144	0.046	0.082	0.028	0.139	0.246	0.177
Gabon	0.089	0.188	0.113	0.144	0.043	0.083	0.024	0.126	0.274	0.193
Azerbaijan	0.090	0.272	0.085	0.143	0.040	0.084	0.018	0.112	0.307	0.212
Syrian Arab Republic	0.092	0.257	0.089	0.143	0.040	0.083	0.019	0.114	0.301	0.209
Equatorial Guinea	0.099	0.204	0.107	0.144	0.042	0.083	0.022	0.123	0.281	0.197
Paraguay	0.102	0.267	0.086	0.143	0.040	0.083	0.019	0.112	0.305	0.211
Fiji	0.106	0.228	0.098	0.143	0.041	0.083	0.021	0.119	0.291	0.203
Swaziland	0.110	0.213	0.104	0.144	0.042	0.083	0.022	0.121	0.285	0.200
Moldova	0.112	0.153	0.129	0.144	0.045	0.082	0.026	0.134	0.256	0.183
Egypt, Arab Rep.	0.114	0.279	0.083	0.143	0.039	0.084	0.018	0.111	0.309	0.213
Ecuador	0.121	0.240	0.094	0.143	0.041	0.083	0.020	0.117	0.296	0.206
Jordan	0.121	0.294	0.079	0.143	0.039	0.084	0.017	0.109	0.314	0.216
Georgia	0.123	0.216	0.103	0.143	0.042	0.083	0.022	0.121	0.286	0.200
Thailand	0.125	0.234	0.097	0.143	0.041	0.083	0.021	0.118	0.293	0.204
Colombia	0.127	0.244	0.093	0.143	0.041	0.083	0.020	0.116	0.297	0.207
Albania	0.130	0.242	0.094	0.143	0.041	0.083	0.020	0.116	0.296	0.206
Tunisia	0.132	0.324	0.071	0.143	0.038	0.084	0.016	0.105	0.322	0.221
Peru	0.136	0.301	0.077	0.143	0.039	0.084	0.017	0.108	0.315	0.217
Armenia	0.141	0.374	0.060	0.143	0.037	0.084	0.014	0.099	0.335	0.228

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Conditional marginal shares for food subgroups, 144 countries, 2005, *continued*

Country	Per capita income	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
Middle-income countries:										
Venezuela, RB	0.151	0.342	0.067	0.143	0.038	0.084	0.015	0.103	0.327	0.224
Malaysia	0.151	0.256	0.090	0.143	0.040	0.083	0.019	0.114	0.301	0.209
Ukraine	0.154	0.312	0.074	0.143	0.038	0.084	0.016	0.106	0.319	0.219
Brazil	0.157	0.281	0.082	0.143	0.039	0.084	0.018	0.110	0.310	0.214
Montenegro	0.160	0.330	0.070	0.143	0.038	0.084	0.016	0.104	0.324	0.222
South Africa	0.168	0.278	0.083	0.143	0.039	0.084	0.018	0.111	0.309	0.213
Macedonia, FYR	0.180	0.388	0.058	0.143	0.036	0.084	0.013	0.098	0.338	0.230
Turkey	0.182	0.310	0.075	0.143	0.038	0.084	0.017	0.107	0.318	0.219
Bosnia and Herzegovina	0.193	0.431	0.049	0.143	0.035	0.084	0.012	0.094	0.347	0.236
Serbia	0.196	0.349	0.066	0.143	0.037	0.084	0.015	0.102	0.328	0.225
Belarus	0.196	0.433	0.049	0.143	0.035	0.084	0.012	0.093	0.347	0.236
Romania	0.200	0.396	0.056	0.143	0.036	0.084	0.013	0.097	0.340	0.231
Saudi Arabia	0.201	0.356	0.064	0.143	0.037	0.084	0.015	0.101	0.330	0.226
Uruguay	0.204	0.379	0.059	0.143	0.037	0.084	0.014	0.099	0.336	0.229
Mauritius	0.204	0.432	0.049	0.143	0.035	0.084	0.012	0.094	0.347	0.236
Chile	0.205	0.310	0.075	0.143	0.038	0.084	0.017	0.106	0.318	0.219
Kazakhstan	0.212	0.260	0.088	0.143	0.040	0.083	0.019	0.113	0.303	0.210
Russian Federation	0.220	0.446	0.047	0.142	0.035	0.084	0.011	0.092	0.350	0.237
Argentina	0.224	0.456	0.045	0.142	0.035	0.085	0.011	0.091	0.352	0.238
Bulgaria	0.228	0.411	0.053	0.143	0.036	0.084	0.013	0.095	0.343	0.233
Oman	0.235	0.455	0.045	0.142	0.035	0.085	0.011	0.092	0.352	0.238
Iran, Islamic Rep.	0.251	0.211	0.104	0.144	0.042	0.083	0.022	0.122	0.284	0.199
Latvia	0.270	0.500	0.038	0.142	0.034	0.085	0.010	0.088	0.360	0.243
Mexico	0.274	0.550	0.031	0.142	0.033	0.085	0.008	0.084	0.369	0.248
Lebanon	0.284	0.673	0.015	0.142	0.031	0.085	0.006	0.076	0.386	0.258
Poland	0.314	0.505	0.037	0.142	0.034	0.085	0.010	0.087	0.361	0.244
Croatia	0.316	0.483	0.041	0.142	0.034	0.085	0.010	0.089	0.357	0.241
Macao, China	0.318	0.489	0.040	0.142	0.034	0.085	0.010	0.089	0.358	0.242
Lithuania	0.319	0.640	0.019	0.142	0.032	0.085	0.006	0.078	0.382	0.256
Estonia	0.332	0.566	0.029	0.142	0.033	0.085	0.008	0.083	0.371	0.249
Brunei Darussalam	0.347	0.552	0.030	0.142	0.033	0.085	0.008	0.084	0.369	0.248
Slovak Republic	0.351	0.520	0.035	0.142	0.034	0.085	0.009	0.086	0.364	0.245
Hungary	0.353	0.514	0.036	0.142	0.034	0.085	0.009	0.087	0.363	0.245
Korea, Rep.	0.379	0.392	0.057	0.143	0.036	0.084	0.013	0.097	0.339	0.231
Bahrain	0.380	0.666	0.016	0.142	0.031	0.085	0.006	0.077	0.385	0.258
Czech Republic	0.420	0.607	0.023	0.142	0.032	0.085	0.007	0.080	0.377	0.253
Slovenia	0.439	0.634	0.020	0.142	0.032	0.085	0.006	0.079	0.381	0.255
Israel	0.446	0.577	0.027	0.142	0.033	0.085	0.008	0.082	0.373	0.250

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Conditional marginal shares for food subgroups, 144 countries, 2005, *continued*

Country	Per capita income	Per capita food	Cereals	Meats	Fish	Dairy	Oils & fats	Fruits & vegetables	Food other	Beverages & tobacco
High-income countries:										
Portugal	0.466	0.797	0.002	0.142	0.030	0.086	0.003	0.070	0.401	0.267
Qatar	0.474	0.613	0.022	0.142	0.032	0.085	0.007	0.080	0.378	0.253
Singapore	0.480	0.432	0.049	0.143	0.035	0.084	0.012	0.094	0.347	0.236
Malta	0.501	0.769	0.005	0.142	0.030	0.086	0.004	0.071	0.398	0.265
Kuwait	0.507	0.762	0.006	0.142	0.030	0.086	0.004	0.071	0.397	0.265
New Zealand	0.551	0.734	0.009	0.142	0.031	0.085	0.004	0.073	0.394	0.263
Finland	0.562	0.709	0.011	0.142	0.031	0.085	0.005	0.074	0.391	0.261
Taiwan, China	0.567	0.675	0.015	0.142	0.031	0.085	0.006	0.076	0.387	0.258
Spain	0.584	1.132	-0.025	0.141	0.027	0.086	-0.002	0.056	0.432	0.285
Italy	0.592	0.834	-0.001	0.142	0.029	0.086	0.003	0.068	0.405	0.269
Ireland	0.604	0.734	0.009	0.142	0.031	0.085	0.004	0.073	0.394	0.263
Denmark	0.607	0.659	0.017	0.142	0.031	0.085	0.006	0.077	0.384	0.257
Sweden	0.618	0.635	0.020	0.142	0.032	0.085	0.006	0.078	0.381	0.255
Hong Kong, China	0.623	0.639	0.019	0.142	0.032	0.085	0.006	0.078	0.382	0.256
Australia	0.636	0.746	0.007	0.142	0.030	0.086	0.004	0.072	0.395	0.263
Cyprus	0.640	0.999	-0.015	0.141	0.028	0.086	0.000	0.061	0.421	0.278
Belgium	0.643	0.747	0.007	0.142	0.030	0.086	0.004	0.072	0.395	0.264
Japan	0.644	0.682	0.014	0.142	0.031	0.085	0.005	0.076	0.387	0.259
France	0.658	0.787	0.003	0.142	0.030	0.086	0.003	0.070	0.400	0.266
Germany	0.681	0.757	0.006	0.142	0.030	0.086	0.004	0.072	0.397	0.264
Canada	0.682	0.670	0.016	0.142	0.031	0.085	0.006	0.076	0.386	0.258
Iceland	0.689	0.755	0.006	0.142	0.030	0.086	0.004	0.072	0.396	0.264
Netherlands	0.692	0.750	0.007	0.142	0.030	0.086	0.004	0.072	0.396	0.264
Norway	0.692	0.711	0.011	0.142	0.031	0.085	0.005	0.074	0.391	0.261
United Kingdom	0.720	0.846	-0.002	0.142	0.029	0.086	0.002	0.067	0.406	0.270
Switzerland	0.726	0.958	-0.012	0.141	0.028	0.086	0.001	0.062	0.417	0.276
Austria	0.750	0.891	-0.006	0.142	0.029	0.086	0.002	0.065	0.411	0.273
Luxembourg	0.906	1.239	-0.032	0.141	0.026	0.087	-0.003	0.052	0.440	0.289
United States	1.000	1.000	-0.015	0.141	0.028	0.086	0.000	0.061	0.421	0.278
Low-income average	0.058	0.130	0.161	0.145	0.049	0.082	0.032	0.150	0.220	0.162
Middle-income average	0.258	0.439	0.051	0.143	0.036	0.084	0.012	0.094	0.345	0.234
High-income average	0.638	0.781	0.005	0.142	0.030	0.086	0.004	0.071	0.398	0.265

Countries are reported based on ascending per capita real income levels.

Source: Authors' calculation using 2005 International Comparison Program (ICP) data.

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