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New International Evidence on Food Consumption Patterns

A Focus on Cross-Price Effects Based on 2005 International Comparison Program Data

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What Is the Issue?

Estimates of consumers' responses to changes in prices help policymakers assess future demand for goods and services, as well as the corresponding need for transportation and infrastructure facilities. An understanding of demand and consumption trends across countries and the ability to predict potential shifts in demand for different products is essential for decisionmakers involved in the agricultural, manufacturing, education, health, and energy sectors.

This report presents updated estimates of cross-price elasticities (the price change of one good impacting quantity demanded of another) for 2005 across countries based on a methodology presented by Regmi and Seale (2010) together with their estimates for 1996. The 2005 data from the World Bank's International Comparison Program offers the most recent consistent data set for such a large number of countries. Demand elasticities tend to change as income levels change, and the 9 years between this updated set of estimates and their original calculation were a period of rapid economic growth, especially in many lower income countries. To our knowledge, the elasticity estimates from this report represent the only available consistent cross-country cross-price elasticity estimates for this large a number of countries (144) over this number of consumption categories (9).

What Did the Study Find?

Results from the two-good demand system:

- The cross-price elasticities in the two-good (food and nonfood) demand system indicate that cross-price elasticity for food with respect to change in nonfood price is higher in middle-income countries than in low- and high-income countries. The poorest countries have relatively low budget shares for nonfood. All spending must be considered as essential, which means that movement across spending categories will be minimal. High-income countries, however, have relatively large nonfood budgets. At the same time, their food needs are generally met, which makes food spending less responsive to nonfood price changes.

- Uncompensated nonfood cross-price elasticities are much larger in magnitude than the food cross-price elasticities—6 times larger for low-income countries and 2.7 and 2.4 times larger for middle- and high-income countries. This finding implies that food price changes can have a relatively large impact on nonfood spending.

Results from the nine-good demand system:

- Within a country grouping, compensated cross-price elasticities for the nine-good demand system are biggest in magnitude for the "recreation" consumption category followed by "other," and "medical and health." These categories can be considered luxury goods, which means that the spending increase for these categories is proportionately larger than the price increase of the other good. Necessities, such as food, experience relatively smaller changes in spending in response to the price change in another good. The cross-price elasticity for education declined in magnitude for all income groups and is now the second lowest, after food, which indicates that it is considered a necessity by consumers.

- The low-income group has the strongest response to food-price changes, with demand changes for most spending categories more than twice as strong as that of middle-income countries and on average close to four times as strong as that of high-income countries. This strong response can be explained by this group's relatively high food-budget share.

These elasticity estimates can be used as inputs in large multicountry models.

How Was the Study Conducted?

This study uses the methodology presented in Regmi and Seale (2010) to derive cross-price elasticities based on 2005 ICP data. Cross-price elasticities are calculated for a 2-good, food-nonfood pairing as well as for 9 major consumption categories from the World Bank's 2005 ICP data across 144 countries: food, beverages, and tobacco (for the first time includes food consumed away from home); clothing and footwear; gross rent, fuel, and power; house furnishings and operations (includes spending on household equipment and maintenance); medical and health; transport and communications; recreation; education; and other." ("Other" includes expenditures for grooming services, jewelry, and other miscellaneous expenditures.)