# The Growing Market for High-Value Food Products in Developing and Transition Countries

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Many developing and transition countries have a large and growing market for high-value food products. An analysis of household data for Lima, Peru, found the top quintile had substantially greater high-value food expenditures than did the lower quintiles. The size of the high-value food market was then calculated for 12 countries with rapidly growing economies and/or large populations using data on per-capita income and its distribution. In these counties the high-value food market was estimated to have some 501 million consumers in 1995, 652 million in 2000, and 765 million in 2003, with more than 350 million in China and 100 million in India alone in 2003.

Although poverty is still widespread, a sizable middle class is emerging in many developing and transition countries. As noted in *The Economist* (2002), "China's middle class is expanding rapidly" as a consequence of its phenomenal economic growth. Some are predicting 400–500 million middle-class Chinese within ten years. With its recent solid economic growth, India also has a growing middle class. "The transformation wrought by the new urban affluence" in India—principally among young, educated, English speakers—is reported in *The Economist* (2003). The sustained economic growth experienced by China and India—the world's two most populous nations—as well as by a number of other major developing and transition countries, has significant consequences for global food demand, particularly the market for high-value food products. In addition, supermarkets are rapidly spreading in developing and transition countries (Reardon et al. 2003). The spread of supermarkets is both a response to rising incomes and changing patterns of consumption and also a contributor to those changes, given that products must be available in order for consumers to be able to purchase them.

As first studied by Ernst Engel in the mid-1800's, the growth of income is accompanied by systematic changes in the pattern of household consumption. Some of the most marked changes relate to food-expenditure patterns. As incomes increase, there is first a shift away from a diet composed almost exclusively of starchy staples to one with greater diversity and more animal products, which are more expensive per calorie (Timmer, Falcon, and Pearson 1983). As households achieve still higher incomes, a marked increase occurs in expenditures on high value-added foods, such as food away from home and prepared foods that are consumed at home.

The central hypothesis of this paper is that the largest source of global growth for high-value food products is the emerging middle class in many developing and transition countries. This study examines the pattern of household food expenditures by income level using data from the 2000 Peruvian Living Standards Measurements Survey (LSMS) for Lima. The sample used contained 1,030 households. The pattern of expenditures for staples, more expensive, and high value-added food products are examined for the Lima households by income (total expenditures) deciles. This data set was chosen because it contains details on food expenditures, particularly on high-value added foods such as food away from home, which other data sets such as the national expenditure surveys for India lack. Total household consumption expenditure rather than household income was used in this analysis, because the former is typically more accurately reported and is also frequently considered to be a better measure of permanent income. The general term, high-value food products, is taken to encompass both more expensive foods such as fresh fruits and vegetables and meat, poultry, and fish, as well as high-value-added foods such as food away from home and prepared foods.

The results for Peru are then used to derive an approximate estimate of the size and growth of the high-value food market in twelve low- and middle-income countries with large populations and/or high

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rates of economic growth. A number of assumptions underlie this estimation. In particular, it is assumed that general consumer food preferences, food prices, and food-product availability are not so different between the countries as to render the analysis seriously flawed. With this in mind, this work should be viewed as an exploratory analysis and an effort to expand knowledge on an important issue, rather than as a definitive study.

## Food-Expenditure Patterns

Table 1 provides monthly average per-capita expenditures by deciles for food categories separated into staples, more expensive, and high-value-added foods. The latter two categories are considered to constitute high-value foods. The differences related to income (total expenditure) deciles also reflect the impact of other factors, such as education and age, which are correlated with income and affect food expenditures. The Peruvian LSMS data limited the food categories that could be included in the analysis. Overall, households increase their spending on every category in Table 1 at higher levels of income (total expenditures). As expected, expenditures on staple foods—two of the most important in Peru being rice and potatoes—increase the least, and that increase probably represents a change in quality more than in quantity.

Expenditures on several of the more expensive and high-value-added foods increase sharply between the 8th and 9th deciles. These categories include fresh vegetables, fresh fruit, red meat, poultry, food away from home, and candy and chocolate. Spending also rises substantially between the 9th and 10th deciles, especially for fresh fruit, red meat, yogurt, butter and cheese, food and drink away from home, prepared foods consumed at home, and alcoholic beverages. Expenditures on a few categories, such as red meat and prepared foods, increase markedly between the 7th and 8th deciles as well but are still at much lower levels of spending than for the highest two deciles.

The bottom two rows of Table 1 compare average expenditures for the top two deciles and the lower eight deciles. For the more expensive food categories, spending is two to three times higher for the top quintile. For dairy products (yogurt, butter, and cheese), spending is more than four times greater. The differences are even more dramatic for the high-value-added categories. Food and drink away from home averages $3.74 for the bottom 80 percent and $17.67 for the top 20 percent, a difference of almost five-fold. Candy and chocolate purchases are more than eight times greater and prepared food and alcoholic beverage expenditures are more than six times greater.

## Estimates of the High-Value Food Market

Lima households in the top quintile had an annual per-capita total expenditure level of at least $2,695. To estimate the size of the high-value food market in other countries it was necessary to equate this figure with a level of gross national income (GNI) per capita; this data is supplied by the World Bank for most countries converted into U.S. dollars using purchasing power parity (PPP). Average per-capita GNI for Peru in 2000 was $4,660 and average per-capita expenditures in Peru in the 2000 survey were $2,034. The minimum level of per-capita GNI for the top quintile was thus $6,172, or approximately $6,000 annually.

The size of the potential high-value food market in each country was estimated based on the average per-capita GNI data and the percentage shares of income or consumption by quintile and for the top 10 percent of the population, also provided by the World Bank. Perhaps the easiest way to explain the methodology used to estimate the size of the high-value food market is to provide a specific example. The average GNI per capita for Brazil in 2000 was $7,300. The highest quintile received 64.1 percent of the income, an average of $23,396. Likewise, the average income of the 4th quintile was $6,680 and of the 3rd quintile $3,686. Income at the midpoint of each quintile was assumed to be equal to the average. Therefore, GNI per capita was $23,396 at the 90th percentile (the midpoint of the highest quintile), $6,680 at the 70th percentile, and $3,686 at the 50th pecentile. The cut-off level of $6,000 for the high-value market was between the 70th and 50th percentiles. With the assumption that the distribution of income can be approximated as being linear, $6,000 would be 0.227 of the distance between the 70th and the 50th percentile, which would be 4.54 percentile points below the 70th percentile. Therefore, 34.54 percent of the population would have been at or above the $6,000 income level by this method. For additional details on the methodology see Senauer and Goetz (2003).

Table 2 gives the size of the high-value food mar-

**Table 1: Average Monthly Per-Capita Expenditures by Decile (PPP US$, Lima, Peru, 2000).**

| Decile | Staples | | More Expensive | | | | | | | High Value-Added | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rice | Potatoes | Fresh Vegetables | Fresh Fruit | Red Meat | Poultry | Fish & Seafood | Yogurt, Butter, & Cheese | Food and Drink Away from Home | Candy & Chocolate | Prepared Food (Consumed at home) | Alcoholic Beverages |
| 1 | 3.21 | 1.05 | 1.10 | 0.90 | 1.15 | 1.83 | 0.87 | 0.28 | 1.37 | 0.11 | 0.37 | 0.27 |
| 2 | 2.44 | 0.91 | 0.80 | 0.89 | 0.88 | 1.99 | 0.73 | 0.30 | 1.23 | 0.04 | 0.39 | 0.24 |
| 3 | 2.84 | 1.00 | 1.13 | 1.19 | 0.88 | 2.50 | 0.93 | 0.38 | 1.97 | 0.04 | 0.36 | 0.15 |
| 4 | 3.04 | 1.57 | 1.42 | 1.44 | 1.58 | 2.90 | 1.04 | 0.72 | 2.81 | 0.08 | 0.66 | 0.22 |
| 5 | 3.57 | 1.36 | 1.46 | 1.79 | 1.88 | 3.67 | 1.37 | 0.59 | 2.92 | 0.10 | 0.25 | 0.34 |
| 6 | 3.77 | 1.69 | 1.50 | 2.14 | 2.47 | 3.94 | 1.01 | 0.61 | 4.64 | 0.10 | 1.12 | 0.36 |
| 7 | 3.89 | 1.47 | 1.69 | 2.23 | 2.47 | 3.89 | 1.31 | 1.00 | 7.21 | 0.15 | 0.72 | 0.97 |
| 8 | 3.92 | 1.54 | 1.92 | 2.39 | 3.19 | 3.93 | 1.64 | 0.94 | 7.73 | 0.15 | 1.88 | 0.98 |
| 9 | 4.69 | 1.96 | 3.00 | 3.72 | 4.21 | 5.99 | 2.14 | 1.45 | 10.84 | 0.57 | 2.69 | 0.78 |
| 10 | 4.89 | 1.86 | 4.88 | 6.54 | 7.27 | 7.83 | 3.42 | 4.02 | 24.49 | 1.13 | 6.18 | 4.56 |
| 1–8 | 3.32 | 1.32 | 1.38 | 1.61 | 1.81 | 3.01 | 1.12 | 0.60 | 3.74 | 0.10 | 0.70 | 0.44 |
| 9&10 | 4.78 | 1.91 | 3.94 | 5.13 | 5.74 | 6.91 | 2.78 | 2.73 | 17.67 | 0.85 | 4.44 | 2.67 |

**Table 2. Estimates of the High-Value Food Market (Millions of Consumers).**

| Country | 1995 | 2000 | 2003 |
|---|---|---|---|
| Brazil | 46.0 | 57.0 | 57.6 |
| China | 225.6 | 299.2 | 352.6 |
| India | 46.5 | 89.4 | 105.5 |
| Indonesia | 45.8 | 20.0 | 27.8 |
| Malaysia | 11.0 | 10.7 | 11.5 |
| Mexico | 36.2 | 44.9 | 43.9 |
| Nigeria | <5.6 | <6.3 | 8.2 |
| Pakistan | 8.3 | <6.9 | 12.7 |
| Peru | 6.0 | 6.8 | 7.5 |
| Phillipines | 12.3 | 17.5 | 20.9 |
| Poland | 16.2 | 28.1 | 27.7 |
| Russian Federation | 41.6 | 65.6 | 89.3 |

Source: Calculated by the author from data in the World Bank, World Development Indicators for various years. The author wishes to thank Swati Agiwal, a graduate student and research assistant at the University of Minnesota, for making the calculations for 2003.

ket in each of the countries in 1995, 2000, and 2003, the most recent year for which World Bank data are available. The respective cut-off or minimum per-capita GNI levels used were $5,310, $6,000, and $6,411. The 2000 GNI level was adjusted for 1995 and 2003 using the U.S. Consumer Price Index. The high-value food market is both large and growing rapidly in a number of countries. Although it has a very unequal income distribution, Brazil has a substantial and growing market of high-value food consumers. However, the number of potential consumers in the high-value food market was virtually static between 2000 and 2003 because the Brazilian economy experienced slow economic growth coupled with inflation during this period.

The greatest number and the most rapid growth in the potential market have been in China, which should not be surprising given its phenomenal economic growth. The Chinese economy grew at an average annual rate of 10.0 percent during the period 1990–2003, according to the World Bank. From some 225 million in 1995, the Chinese high-value food market is estimated to have grown to almost 300 million by 2000 and to have surpassed 350 million persons by 2003. In response to this large and rapidly growing market, domestic supermar-

ket chains and international retailers like Carrefour and Wal-Mart have seen their sales boom in China since the early 1990s (Xue 2005). The number of supermarkets and supercenters expanded from 2,500 in 1994 to 53,100 in 2002; at the same times the stores were also getting larger (Hu et al. 2004). These stores offer convenience, a clean attractive environment, and a vast array of more expensive and high value-added foods, such as ready-to-eat foods prepared according to local preferences in many cases.

India's economic growth averaged 5.9 percent annually for the period 1990–2001 and has grown even more rapidly since then. Its potential high-value food market expanded from less than 47 million in 1995 to over 105 million consumers by 2003. Of course, these consumers represent only about 10 percent of India's population and much of the economic growth has been confined to Southern India around Bangalore and Hyderbad. A. T. Kearney's 2005 Global Retail Development Index concludes that "for food retailers, India now represents the most attractive and compelling single-country investment opportunity" (Farra 2005). This conclusion is based on the size of India's market, the lack of retail saturation, and the high growth rate, which

is expected to continue

The decline of Indonesia's market from 1995 to 2000 reflects the devastating impact of the Asian Financial Crisis of the late 1990s in that country. However, the economy and the number of high-value food consumer have both begun to grow again since 2000. The impact of the financial crisis was less devastating in Malaysia, but growth there has also been slower since 2000. Wal-Mart has been expanding rapidly in Mexico and is now the largest food retailer in that country, which should not be surprising since there are some 44 million potential high-value Mexican food consumers. The fact that the number has changed so little between 2000 and 2003 reflects the lack of per-capita economic growth experienced during this period.

Nigeria and Pakistan both have rapidly growing populations of well over 100 million. However, their high-value food markets have remained small since both countries have failed to sustain solid economic growth. The "<" sign indicates that the size of the market was less than five percent of the population, since the average GNI per capita of the highest decile, assumed to be at the 95th percentile, was less than the cut-off level for high-value food consumers in these cases. The decline in the estimated high-value food market in Pakistan between 1995 and 2000 and the increase from 2000 to 2003 is a reflection of economic conditions during those periods.

The market in Peru has grown very little between 1995 and 2003, reflecting the lack of significant economic growth, whereas the number has increased some 80 percent from 1995 to 2003 in the Philippines to over 20 million, reflecting that country's higher economic growth. The Russian market grew impressively from 1995 to 2003 as the Russian economy recovered from the decline of the early 1990s and the market economy expanded. As the second-largest petroleum exporter, the Russian economy benefited from the rise in oil and natural gas prices since 2000. In fact, Russia ranked as the most attractive investment opportunity for retailers and consumer packaged-goods manufacturers in 2004 by A. T. Kearney, before being supplanted by India in 2005 (Farra 2005). As a consequence of Poland's solid economic performance in the 1990s, 28 million people—over 70 percent of its population—were estimated to be potential consumers of high-value food products by 2000. However, since then the market has remained virtually unchanged, reflecting a slowdown in the economy.

**Conclusions**

Expenditures on high-value foods were found to be substantially higher—several times greater for some products—for Lima households in the top quintile with minimum total household expenditures equated with a GNI per capita of $6,000 annually in 2000. At this income level, some 652 million people were estimated to be in the potential market for high-value foods in the 12 developing or transition countries with large populations and/or rapid rates of economic growth shown in Table 2. Adjusting for changes in the value of the dollar due to inflation, the high-value food market in these countries was 501 million consumers in 1995 and 765 million consumers in 2003, so it is a market that is also growing rapidly.

The growth in this market has been concentrated, not surprisingly, in countries with the highest rates of economic growth. The world's two most populous countries, China and India, having benefited from robust economic growth, now have more than 350 million and 100 million potential high-value food consumers, respectively. Most of the future growth in the global market for high-value food products will come from developing and transition economies. This expanding market is creating significant opportunities for food marketers and producers, both domestic and international, including U.S. food companies and farmers. The rapid spread of supermarkets and supercenters in countries such as Brazil, China, and Mexico is in part a reflection of this opportunity.

Certain caveats and suggestions for further research would seem appropriate. Additional empirical studies are certainly needed with data for other developing and transition countries. In addition, the exact level of GNI per capita used to estimate the high-value food market is admittedly somewhat arbitrary.

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